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United States
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Tongass National Forest

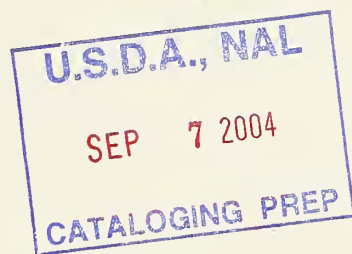
R10-MB-485a

July 2004



Gravina Island Timber Sale

Record of Decision





United States
Department of
Agriculture

Forest
Service

Alaska Region
Tongass National
Forest

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File Code: 1950
Date: July 23, 2004

Dear Reader:

Here is your copy of the Record of Decision (ROD) for the Gravina Island Timber Sale project area on the Ketchikan-Misty Fiords Ranger District, Tongass National Forest. The ROD documents my final decision on the Selected Alternative, and the facts considered in reaching the decision. The effective date of implementation for the decision and the Notice of Rights of Appeal are also specified in the ROD.

Copies of the ROD and the Final EIS have been directly mailed to those people who requested to be on the project mailing list. Copies of this ROD and the Final EIS are also available for review at Forest Service offices throughout the Tongass. For more information, contact the Ketchikan-Misty Fiords Ranger District at 907-225-2148.

As the Forest Supervisor, I am responsible for this decision. I want to thank those of you who took the time to review and comment on the Draft Environmental Impact Statement. Your interest in the management of the Tongass National Forest is appreciated.

Sincerely,

FORREST COLE
Forest Supervisor



Gravina Island Timber Sale

Record of Decision

**United States Department of Agriculture
Forest Service Alaska Region**

Lead Agency: USDA Forest Service
Tongass National Forest

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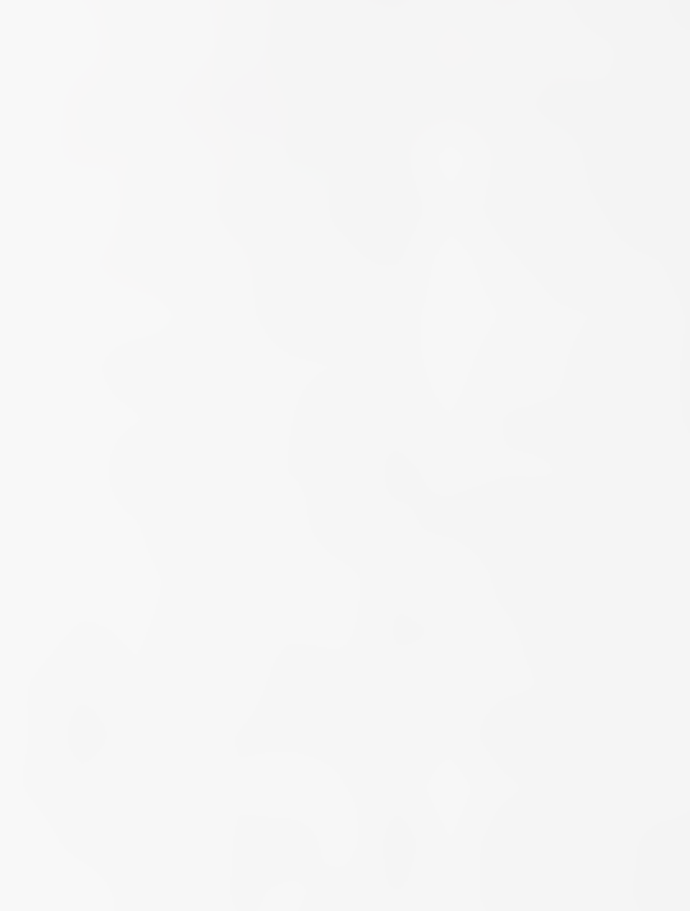
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Record of Decision

Journal of the American Medical Association



Record of Decision

Gravina Island Timber Sale

USDA Forest Service
Ketchikan-Misty Fiords Ranger District
Tongass National Forest
Alaska Region
Ketchikan Gateway Borough

Introduction

This Record of Decision (ROD) documents my decision to select an alternative from the Gravina Island Timber Sale Final Environmental Impact Statement (Final EIS).

Gravina Island (61,404 acres) is roughly 1 mile west of the communities of Ketchikan and Saxman and 6 miles northwest of Metlakatla in the southeast corner of Alaska. Currently, Gravina Island is accessible only by water or air. The Ketchikan International Airport is located on Gravina Island and is accessible from Ketchikan by airport ferry, private boat or commercial floatplane.

The eastern portion of Gravina Island includes ownerships by Ketchikan Gateway Borough, various State agencies and private landowners. The Alaska Department of Natural Resources (DNR) administers lands in the central and eastern part of the island as well as the Vallenar Bay area in the northwest. The Alaska State Parks Department manages a park at Black Sands Beach on the southeastern portion of the island. A second marine park is proposed at Dall Bay.

National Forest System lands encompass approximately 39,393 acres on the western half of the island (the project area). Bostwick Inlet, an area that is actively used for subsistence resources, is located approximately 6 miles north of Dall Head, on the southern portion of the island. The Gravina Island timber sale project lies within the boundaries of the Gravina Island Inventoried Roadless Area 522.

There has been widespread national interest associated with the Gravina Island Timber Sale as it relates to road building in an inventoried roadless area. There has also been extensive testimony from the local Native communities and tribal governments expressing concern with

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the project's potential impact on traditional subsistence uses on the island, particularly in Bostwick Inlet. Other members of the communities and local governments support activities that would provide jobs and increased recreational opportunities.

The Selected Alternative achieves Forest Plan goals for Gravina Island while considering impacts to subsistence users.

This decision includes the specific location and design of timber harvest units and roads, access management, and resource protection measures to be implemented. Timber from this project would be sold in sales of varying sizes.

Decision

This Record of Decision documents my decision to implement activities in the Gravina Island Timber Sale project area. My decision encompasses the following:

- the location and method of timber harvest, road construction, log-transfer facilities, and silvicultural practices,
- the implementation of an appropriate access management strategy,
- mitigation measures and monitoring requirements,
- approval of a non-significant amendment to the Forest Plan (see Appendix 1), adopting changes in small Old-growth Habitat Reserves recommended by the interagency biologists.

It is my decision to choose a modified version of Alternative 3 as the Selected Alternative for implementation in the Gravina Island Timber Sale project area.

This decision is based on the environmental analysis in this EIS including agency, tribal, and public comments received during the comment period on the Draft Environmental Impact Statement. This decision meets the Purpose and Need for the project; is consistent with the Tongass National Forest Land and Resource Management Plan Record of Decision; and is responsive to issues raised during scoping, to information gathered during the environmental analysis, and to public and agency comments on the Draft EIS.

Description of Selected Alternative

Both Alternatives 3 and 4 were identified as Preferred Alternatives in the Draft EIS. Alternative 3 was modified to respond to public comments on the Draft EIS and is hereafter referred to as the Selected Alternative.

Timber Harvest

The Selected Alternative will harvest timber from approximately 1,807 acres in the project area (Table R-1). It would convert 1,051 acres of old-growth stands to an even-aged condition, convert 312 acres to a 2-aged condition, and convert 444 acres of old-growth stands to an uneven-aged condition. This harvest will provide an estimated 37.9 million board feet of sawlog and utility volume based on estimates of unit volume (actual cruised volume may vary). It will also provide 239 jobs to support the local economy. Design features and mitigation measures for the 58 harvest units are described in detail on the unit cards in Appendix 2 of this Record of Decision.

The following modifications were made to harvest units from Alternative 3:

- Units 36, 58, 60, 61, and 62, all containing high-value deer winter habitat, were dropped, and will not be harvested in this project. These units were scheduled as helicopter access and their deferral will accomplish several goals: preserve high-value deer winter range, improve the economics of the proposed sale on the north end of the island, and reduce timber harvest near Bostwick Inlet, thereby addressing some concerns expressed by Alaska Natives. This also eliminates the need for a log drop location in the interior portion of Bostwick Inlet.

- Unit 19 was dropped because site-specific data showed it to be unsuitable forest land. Half of this unit was highly productive but was dropped due to an alluvial fan. It will be removed from the commercial timber base.
- Unit 45 was changed from a combination of helicopter and cable logging system to cable only. The end of mainline road 8105000-1 was shortened and moved to the interior of Unit 45 to facilitate this change in harvest.
- Unit 4 had the western portion of the unit deleted that was found to be non-commercial forest land.
- Unit 21 had the boundary moved to exclude the adjacent Riparian Management Area.
- Units 107 and 108 (which were included in Alternative 4) above the 500-foot contour line were added to improve the economics of the helicopter sale at the south end of the island. Areas below 500 feet in elevation were left out due to their wildlife value for goshawks and deer. This also excluded an area of high-vulnerability karst from Unit 108.
- Units 96 and 105 (which were included in Alternative 4) were added to improve the economics of the helicopter sale at the south end of the island.

Transportation System

This alternative will construct 20.6 miles of new classified roads and 1.2 miles of temporary roads, including 6.7 miles of road across DNR, Mental Health Trust, and Ketchikan Gateway Borough lands that will require an easement. All roads in this project will be managed as displayed in the road cards (Appendix 3 of this Record of Decision). The road system will connect with a new road, proposed to be built by Ketchikan Gateway Borough, to access an existing log transfer facility on the Tongass Narrows north of the Ketchikan International Airport for timber transport. Since this facility and portions of the road system are not located on National Forest System lands, use agreements will be negotiated with the current owners. Should the Borough road not be constructed at the time the Forest Service advertises a sale, the Forest Service will construct a portion of this road (1.65 miles) to the LTF.

Helicopter units on the south end of Gravina Island will be flown to log drop locations. The exact location of these log drops will be determined by the purchaser and require a State permit.

Upon completion of the timber sale project, 8.8 miles of classified roads will be closed (Maintenance Level 1) and all temporary roads will be decommissioned. Decommissioning is a permanent closure, and includes stabilization and restoration of the road surface to a more natural state. Mainline road 8100000 (11.8 miles) will be left open for recreational purposes and subject to seasonal restrictions on its use. To limit impacts on subsistence use of deer, reduce hunting and trapping pressure on marten and wolves, and respond to a request by the State of Alaska during Coastal Zone consultation, the portion of this road on NFS land will be closed to all motorized traffic through Special Forest Orders and physical barriers during deer hunting and wolf trapping seasons (generally August 1 through March or April). The road will remain open May through July for public recreational access. This regulation will vary from year to year, based on the current year's hunting and trapping regulations. Physical barriers will consist of a gate at the NFS boundary, large rip-rap, pulled bridge or culvert, or a combination of these. Special Forest Orders will consist of an Administrative Closure order, which will be posted at the point at which the road is closed; patrols by law enforcement personnel and district staff will monitor for compliance and effectiveness of the road closure/barriers.

Old-growth Reserves

The Selected Alternative adopts changes to the three small Old-growth Reserves, as recommended by interagency biologists, through a non-significant amendment to the Forest Plan (Appendix 1 of this Record of Decision). These modifications to the boundaries of the Old-growth Reserves better address the Forest Plan objectives for biodiversity. The areas to be added to the small Old-growth Habitat Reserves are in the Scenic Viewshed land use

designation (LUD). The area to be removed from the Old-growth Habitat LUD in VCU 7650 will change to the Scenic Viewshed LUD. The net change for the project area is an increase of 300 acres in the Old-growth Habitat LUD, which is not considered significant with respect to the size of the overall planning area within the Tongass National Forest.

Mitigation and Monitoring

This Record of Decision incorporates mitigation measures to reduce or eliminate adverse environmental effects of timber harvest specified in the Selected Alternative. These mitigation measures are listed in Appendix 2 (Unit Cards) and Appendix 3 (Road Cards) of this Record of Decision, and in Chapter 2 of the Final EIS. Chapter 2 also describes the project-level implementation and effectiveness monitoring planned to determine how well resource management objectives have been met.

A gate will be installed on the 8100000 mainline road and an administrative closure order will be in force at the National Forest System boundary during deer hunting and wolf trapping seasons (generally from August 1 through March or April); beyond the NFS boundary, the mainline road will be open May through July. All other projects will be closed upon completion of harvest activities, and custodial maintenance will be performed to protect the road investment and keep damage to adjacent resources to an acceptable level. This will include the replacement of drainage pipes (culverts) with storm-proofed ditches and drainage features. Temporary roads will be decommissioned (permanently closed). Non-motorized travel will not be restricted. Patrols by law enforcement personnel and district staff will monitor for compliance and effectiveness of the road closure/barriers.

Several helicopter harvest units are located in the vicinity of Phocena Bay. This bay is a popular anchorage, and a recreation cabin receives moderate use during the summer months. To ensure public safety, the cabin will be closed to public use during harvest activities, and public notices of harvest activities will be placed in local publications and the Forest Service's cabin reservation system.

Background

The project is a component of the overall timber sale program on the Tongass National Forest. Timber sales are allowed by the Forest Plan in order to maintain a supply of timber from National Forest System lands for Southeast Alaska.

The National Environmental Policy Act (NEPA) process for the Gravina Island Timber Sale project began when a proposed action was published in the *Federal Register* as a Notice of Intent to Prepare an Environmental Impact Statement on November 1, 1999.

After the notice in the *Federal Register*, public scoping, data collection and analysis, and documentation continued. A Draft Environmental Impact Statement (Draft EIS) was distributed in January of 2001. Public review and comments on the Draft EIS were collected until June 26, 2001. Each of the comments have been reviewed and answered, and the EIS revised accordingly.

When the Draft EIS was published, five alternatives were considered in detail; Alternatives 3 and 4 were identified as Preferred Alternatives. A sixth alternative was added to the Final EIS, in response to public comment.

The Roadless Area Conservation Rule (36 C.F.R. 294 Subpart B), adopted January 12, 2001, generally prohibited timber harvest and road construction in Forest Service inventoried roadless areas. On December 30, 2003 after analysis of current conditions in SE Alaska and public comment on the proposal, the Department amended the roadless rule so that the Tongass National Forest are not subject to the prohibitions (against commercial harvest and roadbuilding) in the roadless rule.

The Forest Service Transportation Policy requires that until a Forest-wide roads analysis is completed, an area-specific roads analysis and a determination of need for amendment or revision of the Forest Plan be done, if any roads are to be constructed or reconstructed in inventoried roadless or contiguous unroaded areas (FSM 7712.16(c)). The Forest-wide roads analysis (for Maintenance Levels 3, 4, and 5) was completed in February 2003. The project-level analysis was completed for Gravina Island and is in the project planning record.

Purpose and Need

The Purpose and Need for the Gravina Island Timber Sale is to respond to the following goals and objectives identified by the Forest Plan:

- Manage the timber resource for production of saw timber and other wood products from suitable timber lands made available for timber harvest, on an even-flow, long-term sustained yield basis and in an economically efficient manner.
- Seek to provide a timber supply sufficient to meet the annual market demand for Tongass National Forest timber, and the market demand for the planning cycle.
- Provide a diversity of opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska.
- Support a wide range of natural resource employment opportunities within Southeast Alaska's communities.

Appendix A of the Final EIS provides additional rationale for why the Gravina Island project area was selected for analysis at this time. Further clarification can be found in the next section regarding this project's relationship to the Forest Plan.

The alternatives considered are possible approaches to meeting the Purpose and Need. The environmental analysis documented in the Final EIS for the Gravina Island Timber Sale project was conducted under the guidelines of the National Environmental Policy Act (NEPA) process. The Final EIS was designed to help insure that I make the most informed decision possible for this proposed project.

Section 101 of the Tongass Timber Reform Act of 1990 (TTRA) directs that the USDA Forest Service "... to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle." Section 101 of the TTRA specifies that Forest Service efforts to seek to meet market demand are subject to appropriations, National Forest Management Act requirements, and other applicable laws. Providing a sustained timber supply from the Tongass for wood products industry employment and related economic and social benefits helps meet the Forest Plan objective of supporting a wide range of natural-resource employment opportunities within Southeast Alaska's communities.

Reasons for Decision

In making my decision, I considered the many issues raised during the development and scoping of this project, the Forest Plan Standards and Guidelines relevant to the project area, and the competing interests and values of the public. Many divergent public and agency opinions were expressed during the analysis. These comments have helped me make a better-informed decision. I have considered all views that have been expressed, and have incorporated them where feasible and consistent with the Purpose and Need of the project.

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I carefully considered the comments of those opposing this project. Both I and my predecessor have met personally with leaders of the three federally recognized tribal governments in the area. I take their opposition to any timber harvest on Gravina Island very seriously. Within the limits of meeting Forest Plan goals and management prescriptions I have taken all reasonable steps to mitigate impacts to subsistence resources.

The Selected Alternative provides the most beneficial mix of resources for the public, within a framework of existing laws, regulations, policies, public needs and desires, and the capabilities of the land, while meeting the stated Purpose and Need for this project. Specific reasons for the decision include:

- My decision to implement this Selected Alternative conforms to the Forest Plan and sound National Forest System management. I have considered the need to help provide a sustained level of timber supply to meet annual and Forest Plan planning cycle market demand, and to provide diverse opportunities for natural resource employment, consistent with multiple use and sustained yield of all renewable forest resources. The estimated 37.9 MMBF of timber made available through this project would help meet Southeast Alaska timber supply needs.
- The Selected Alternative provides roaded recreation access to the people of Ketchikan by keeping the mainline road open following timber harvest.
- The Selected Alternative addresses effects to subsistence users by closing the NFS portion of the mainline road at the NFS boundary to motorized traffic during deer hunting and wolf trapping seasons. It also uses an existing log transfer facility in Tongass Narrows. It avoids building a log transfer facility in Bostwick Inlet.
- The Selected Alternative considers road maintenance costs by closing (putting in storage) non-mainline classified roads and decommissioning all temporary roads following harvest activities.
- Stream protection measures and Best Management Practices are expected to preclude measurable effects on fish habitat and water quality.
- The Selected Alternative uses a mix of uneven-aged, even-aged, and two-aged harvest systems. These prescriptions are based on consideration of many factors which are described in Chapter 3 of the Final EIS and on a unit-by-unit basis in the unit cards (Appendix 2 of the ROD).
- The Selected Alternative increases the effectiveness of the small Old-growth Habitat Reserves by increasing their size, proportion of productive old growth, and connectivity through a modification of the small Old-growth Habitat Reserves.
- Effects to scenery from the Visual Priority Travel Routes and Use Areas designated in Appendix F of the Forest Plan have been mitigated by unit selection, harvest prescriptions and unit design. Timber harvest in units viewed from Ketchikan, Metlakatla, Nichols Passage, Bostwick Inlet and Vallenar Bay will not be evident to the casual observer.
- Since the entire project area lies within the Gravina Island Inventoried Roadless Area 522, all of the action alternatives would affect to some degree the roadless characteristics of the area and its eligibility for inclusion in the National Wilderness Preservation System. However, the Forest Plan SEIS evaluated the suitability of Gravina Island for wilderness designation, and Gravina ranked 47th from the highest (along with five other roadless areas) among the 109 Tongass inventoried roadless areas. This was in part due to the proximity of Ketchikan and extensive State and private lands that are likely to be developed for urban-related purposes in the near future. Overall, the relative contribution of this roadless area to the National Wilderness Preservation System was evaluated to be low to moderate. The majority of Gravina Roadless Area 522 (31,177 acres) will remain roadless after project implementation.

Significant Issues

In making my decision, I considered issues identified during the planning process.

Issues for the Gravina Island Timber Sale project were identified through public and internal scoping and further defined after analyzing comments on the Draft EIS and testimony from the subsistence hearings. Issues A, B, and C were identified early in the process. Issue D, preserving the roadless character of Gravina Island, resulted directly from analysis of comments on the Draft EIS. In the following summary, I disclose how the Selected Alternative addresses each of the significant issues. Table 2-5 and Chapter 3 of the Final EIS supplement the following discussion and provide a comparison of the alternatives.

Issue A: Timber Economics

People are concerned about the economic viability of timber sales, and the impact of timber harvest on the economy of the Ketchikan area and throughout Southeast Alaska.

The Selected Alternative provides an estimated 37.9 MMBF of timber that will contribute to the Forest Service's attempt to seek to meet market demand in a manner consistent with the Tongass Land and Resource Management Plan and the standards and guidelines for all resources. Timber from this project is needed as a component of the timber sale schedule to provide timber to industry in an even flow over the 10-year planning cycle. This alternative will provide an estimated 239 jobs to the local communities.

Issue B: Subsistence

There is concern that subsistence resources can be impacted by an open road system on the island and that any activity in Bostwick Inlet will affect the marine subsistence resources.

This issue centers on the importance of Gravina Island for subsistence and traditional use by the residents of Metlakatla, Saxman and Ketchikan. Although Ketchikan is not designated as rural, residents of all three communities have historically used Gravina Island for traditional hunting and gathering. They are concerned that road building and timber harvest on the island will affect deer populations. The Bostwick Inlet area provides accessibility to the interior of the island with a low-elevation valley. Hunters also can take a small ferry to the Ketchikan International Airport and hike into hunting areas, or access the shoreline from small boats. Roaded access to interior parts of the island would increase hunter access and could reduce deer populations. Bostwick Inlet is also a popular area for marine resources such as fishing, shellfish and seaweed.

The Selected Alternative responds to these concerns by maintaining high-value deer winter habitat through unit selection, design and silvicultural prescriptions. Access for hunting will be managed by decommissioning all temporary roads and closing (by putting in storage) some of the classified roads. The mainline of the classified roads left open for long-term use will be closed at the NFS boundary to all motorized traffic through Special Forest Orders and physical barriers during deer hunting and wolf trapping seasons. Dropping Units 58, 60, 61, and 62 also reduces timber harvest and log drops in Bostwick Inlet, mitigating subsistence concerns in that area.

Issue C: Access Management

Road and trail access on Gravina Island can provide additional recreation opportunities for Ketchikan.

This issue addresses concerns for outdoor recreation opportunities including scenic values offered in and around the Gravina Island Timber Sale project area and the effects timber harvest may have on these opportunities.

The Selected Alternative maintains all existing recreation uses within the Gravina Island Timber Sale project area, while increasing accessibility for those who cannot use the area due to the rugged terrain. These uses include hiking, deer hunting, berry-picking, sightseeing, camping, and freshwater fishing. The roads kept open after the sale will provide motorized

access (except during deer hunting and wolf trapping seasons) to areas previously inaccessible. Closed roads can be used as hiking or bicycling trails.

Issue D: Roadless Character and Wilderness Eligibility

Harvesting trees and building and maintaining a road system for recreational use will change the roadless character of the island.

The purpose of the Tongass Forest Plan was to create a Forest-wide, long-term plan to achieve the desired balance of uses over the entire Tongass National Forest. The Tongass Forest Plan identified Gravina Island as one of the currently predominantly inventoried roadless areas that would likely be significantly developed in implementing the Forest Plan.

The Gravina Island Timber Sale project lies within the boundaries of the Gravina Inventoried Roadless Area 522. During the analysis for the revision of the Forest Plan, and supplemental analysis directed by the Court, the inventoried roadless areas were reevaluated for their value as undeveloped areas or for potential inclusion in the National Wilderness Preservation System (Forest Plan Final EIS), Appendix C). A portion of the Gravina Inventoried Roadless Area 522 has been allocated to development land use designations, which allow timber harvest and road construction. The Selected Alternative would harvest 1,807 acres within the roadless area. There are 20.6 miles of classified road construction planned within the roadless area, of which 8.8 miles will be closed when the timber sale is completed. The remaining 11.8 miles of mainline road will be left open for recreational purposes and subject to seasonal restrictions on its use. The NFS portion of the mainline road will be closed during deer hunting and wolf trapping seasons (currently August 1 through April 30) and be open for public use May through July. Any temporary roads will be decommissioned after timber harvest and the remaining classified roads will be closed and put into storage.

In *Sierra Club v. Lyons* (J00-0009 CV (JKS)), the U.S. District Court, District of Alaska directed the Forest Service to prepare a Supplemental Environmental Impact Statement (SEIS) that evaluates and considers roadless areas within the Tongass for recommendation as potential wilderness areas. The Notice of Availability for the Final SEIS and Record of Decision appeared in the *Federal Register* on March 7, 2003. In the SEIS Record of Decision, the No-action Alternative was selected, in which no additional wildernesses were recommended and the existing Land Use Designations were maintained. The roadless inventory and roadless area descriptions were updated to support the SEIS, and were incorporated into the Gravina Island Final EIS analysis.

The area where the Gravina Island project roads are planned is not the most suitable area for wilderness recommendation because of its relative proximity to the sights and sounds of the airport flight paths and floatplane fly-overs. In addition, it is located adjacent to land owned by other agencies, including the Ketchikan Gateway Borough, the State of Alaska Department of Natural Resources (DNR) and Mental Health Trust, all of whom have expressed an interest in future development. The road system will enhance access from these other ownerships to adjacent National Forest System lands, reducing the opportunities for solitude and primitive recreation in the interior of the island. However, apparent naturalness and opportunities for solitude and primitive recreation will be maintained in the western and southern majority of the island. After project implementation, the roadless area will be approximately 31,177 acres, still exceeding the minimum wilderness eligibility criteria for size (5,000 acres).

Public Involvement

Public involvement has been instrumental in the identification and clarification of issues for this project. This has been helpful in the formulation of alternatives and has assisted me in making a more informed decision for the Gravina Island Timber Sale project. Public meetings, *Federal Register* notices, newspaper and radio news releases, open houses, government-to-government consultation, group and individual meetings, and the Tongass National Forest Schedule of Proposed Actions, were used to solicit input for this project.

Notice of Intent (NOI)

A Notice of Intent was published in the *Federal Register* on November 1, 1999, when it was decided that an EIS was to be undertaken for the project.

Public Mailing

On December 14, 1999, a scoping letter providing information and seeking public comment was mailed to 368 individuals and groups that had previously shown interest in Forest Service projects in Southeast Alaska. This included Federal and State agencies, Alaska Native groups, municipal offices, businesses, interest groups, and individuals. A total of 25 responses to this initial mailing were received. On April 1, 2000, a letter displaying the significant issues and preliminary alternatives was mailed to 378 individuals and groups. Sixteen responses to this mailing were received.

Local News Media

A legal ad for the Notice of Availability of the Draft EIS was published in the Jan. 24, 2001 edition of the *Ketchikan Daily News*. Display ads for public meetings in Ketchikan and Metlakatla were published in the *Ketchikan Daily News* on Feb. 9, 2001 and May 12, 2001. A news release was published in the *Ketchikan Daily News* on March 6, 2001 regarding the extension of the Draft EIS public comment period from March 19 to June 26, 2001. Display ads for subsistence meetings to be held in Metlakatla, Saxman, and Ketchikan were published in the *Ketchikan Daily News* on Feb. 9, 2001 and April 14, 18, 21, and 23, 2001.

Public Meetings

Public meetings were held in Ketchikan on November 23, 1999, January 20, 2000 and January 26, 2000 to provide project information, present the Proposed Action, and discuss local concerns and interests that should be addressed in the Gravina Island Timber Sale project analysis. In addition, the Gravina interdisciplinary team participated in the Ketchikan Planning Fair on October 6, 1999. Discussions during these meetings identified issues and concerns that are reflected in the issue statements. Twelve written responses were received following these meetings. After the Draft EIS was published, public information meetings were held in Ketchikan on March 1, 2001, and in Metlakatla on May 15, 2001. In addition, in January 2002, the Forest Service began inviting public participation in monthly Big NEPA meetings, in which IDT members discuss the current status of all planning projects, including Gravina Island.

Consultation with Tribal Governments

Government-to-government consultation with federally recognized tribal governments and meetings with traditional tribal governments have taken place as follows:

- Ketchikan Indian Corporation (KIC) - November 10, 1998
- Metlakatla Indian Community (MIC) - October 14, 1999 and December 6, 1999
- Saxman Tribal Council - September 22, 1999
- KIC Subsistence Committee - September 30, 1999
- Tongass Tribe/KIC representatives - November 23, 1999

Tribal government representatives from the Tongass Tribe and KIC participated with the interdisciplinary team in developing alternatives on March 14, 2000. Additionally, consultations were held with tribes after the issues and alternatives were identified:

- KIC - March 23, 2000
- MIC - April 27, 2000
- Tribal Council meeting (MIC) - Jan. 16, 2001
- Joe Williams (Saxman) - March 12, 2001

Additional meetings were held with all three tribal leaders

- MIC, KIC, Saxman - February 13, 2002

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- Joe Williams (Saxman) - May 7, 2002
- MIC, KIC, Saxman - March 22, 2004

During 2002-2004, the Ketchikan-Misty Fiords Ranger District Heritage Program and Planning Staff participated in additional consultations with the Native Site Guardianship Council, Subsistence Committee, and with tribal governments and traditional clans in Ketchikan, Saxman, and Metlakatla, as part of our response to concerns expressed during public comment and tribal government consultations regarding the Gravina Draft EIS. Recognizing that prehistoric and historic archaeological resources are irreplaceable Heritage resources, we are working to establish a program that would provide increased opportunities for concerned and responsible individuals selected by the tribal governments and traditional clans to be an important and integral part of managing heritage resources.

Meetings with Agencies, Communities and Other Groups

An interagency group of biologists met on October 22, 1998 to review the location and use of the small Old-growth Reserves on Gravina Island.

The following meetings were also held to identify issues and alternatives:

- Ketchikan Gateway Borough Planning Department – August 8, 1998
- Ketchikan Gateway Borough Planning Department – May 18, 1999
- Ketchikan Working Group – August 10, 1999
- Ketchikan Gateway Borough Planning Department and HDR, Inc. (Borough consultant) – August 11, 1999
- Ketchikan Gateway Borough Planning Department – August 18, 1999
- U.S. Army Corps of Engineers – September 16, 1999
- Ketchikan Gateway Borough Planning Dept. and Ketchikan Working Group – October 4, 1999
- Alaska Mental Health Trust Lands and Borough Planning Dept. – May 21, 1998 and October 6, 1999
- Ketchikan Chamber of Commerce – January 12, 2000
- Tongass Conservation Society subsistence discussion meeting and video at Ted Ferry Center – December 1, 2001
- Alaska Dept. of Natural Resources and Ketchikan Gateway Borough Planning Dept. – February 5, 2004.

Meetings were held with other local, State and Federal agencies in conjunction with the Gravina Access Project: September 27, 1999, October 7, 1999, November 15, 1999, December 14, 1999, January 26 and 27, 2000, February 16, 2000, and March 15, 2000.

An independently facilitated session was held on May 12, 2000 to discuss coordination of plans with other land management agencies. Participants included: Ketchikan Gateway Borough, Alaska Department of Natural Resources, U.S. Army Corps of Engineers, Alaska Mental Health Trust Lands, Metlakatla Indian Community, Ketchikan Indian Corporation, Organized Village of Saxman, National Marine Fisheries Service, U.S. Fish and Wildlife Service, and Alaska Department of Fish and Game.

In addition, Ketchikan Gateway Borough Planning Dept., Alaska Department of Fish and Game, U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers participated throughout the process with the interdisciplinary team in identifying issues and developing alternatives.

Draft EIS

Availability of Draft EIS for Public Comment

Availability of the Draft EIS was announced on January 19, 2001, both in the *Federal Register* and through legal notice published January 24, 2001 in the *Ketchikan Daily News*. These

notices started a public comment period, which began January 24, 2001. The comment period was extended beyond the required 45 days, to June 26, 2001, to provide the public more opportunity to review and comment on this sale while questions about the National Roadless Conservation Rule were being resolved. The Draft EIS document was also mailed to Federal and State agencies, Native and municipal offices, and others who requested them.

Subsistence Hearings

Following publication of the Draft EIS, subsistence hearings were held in Metlakatla on February 13, 2001, in Saxman on February 26, 2001, and in Ketchikan on April 23, 2001. Testimony from these hearings is included as Appendix C of the Final EIS.

Analysis and Incorporation of Public Comments

Public comments and subsistence comments have been analyzed and incorporated into the Final EIS. For an analysis of public comment and the Forest Service response to public comment, see Appendix B of the Final EIS.

Final EIS

Publication of the Final Environmental Impact Statement

The Notice of Availability of the Final EIS has been published in the *Federal Register* and through legal notices in the *Juneau Empire*, the newspaper of record, and in the *Ketchikan Daily News*. Copies of the Final EIS are mailed to Federal and State agencies, federally recognized tribal governments, municipal offices, and to those who requested them or responded to the Draft EIS. An e-mail notification was sent to those who submitted electronic form letters in response to the Draft EIS informing them the availability of the ROD on the Internet at <http://www.fs.fed.us/r10/tongass/projects/decisions/04gravina.shtml>. The Final EIS is also available for review at the Ketchikan-Misty Fjords Ranger District Office.

Coordination with Other Agencies

From the time scoping was initiated, meetings and site visits with all interested State and Federal agencies have occurred. Issues were discussed and information was exchanged. Personnel from the Alaska Division of Governmental Coordination, Alaska Department of Fish and Game, Alaska Department of Environmental Conservation, and the U.S. Fish and Wildlife Service visited the project area during the environmental analysis.

The Alaska Coastal Management Plan (ACMP) consistency review process was initiated upon publication of the Draft EIS through the Alaska Division of Governmental Coordination (currently the Alaska Department of Natural Resources, Office of Project Management and Permitting). A Project Clarification letter was submitted after analyzing responses to comments on the Draft EIS. As part of this process, a coordination meeting was held with the State of Alaska, including the Department of Fish and Game and the Department of Environmental Conservation, and the meeting agreements were confirmed in a letter from the Forest Service to DGC. The State replied that they would concur with our final consistency determination with the application of seasonal road closures through the deer hunting and wolf and marten trapping seasons, to further reduce impacts on wildlife habitat and subsistence; these have been incorporated into the Selected Alternative.

A Biological Assessment was prepared and sent to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service as part of the Section 7 consultation process under the Endangered Species Act. Both agencies concurred with our findings.

The State Historic Preservation Officer has been consulted, in accordance with Section 106 of the NHPA and 36 CFR Part 800. Native communities have been contacted and public comment encouraged. The Forest Service has satisfied the consultation process with the State Historic Preservation Officer. No effects on known heritage resources are anticipated.

The Final EIS identifies the agencies that were informed of and/or involved in the planning process (see List of Agencies, Organizations, and Individuals Sent Copies of this Statement in Chapter 4).

Alternatives Considered in Detail

Six alternatives were considered in detail in the Final EIS. Each action alternative is consistent with the Forest Plan. For a complete description of these alternatives, refer to Chapter 2 of the Final EIS.

Alternative 1

The No-action Alternative represents the existing conditions in the Gravina Island Timber Sale project area, and serves as the baseline against which the effects of the other alternatives are measured.

This alternative proposes no new timber harvest or road construction. It does not preclude timber harvest from other areas, or from Gravina Island at some time in the future. The map for Alternative 1 shows the land use designations and VCUs for the project area.

Alternative 1 would not provide for an economic timber supply (Issue A) nor would it provide new recreational access to the island (Issue C, Final EIS, Chapter 1). This alternative would address several other concerns by having no adverse effects on old-growth associated wildlife, subsistence and traditional uses, scenic views, roadless characteristics, and the marine environment. This alternative would leave the small Old-growth Reserves in their original locations. There would be no decrease in primitive recreation opportunities on the island.

Alternative 2

Alternative 2 was designed to address the issue of timber supply and economics (Issue A). It emphasizes positive economics by maximizing the number of units harvested by conventional cable systems and limiting the number of helicopter units to those with short flight distances.

This alternative would harvest 94,183 CCF (39.7 MMBF) of timber from 56 units (Table R-1). The timber would be removed by helicopter, cable and shovel logging. It would convert 1,135 acres of old-growth stands to an even-aged condition, convert 262 acres to a two-aged condition, and convert 404 acres of old-growth stands to an uneven-aged condition.

The three small Old-growth Reserves would be modified as recommended by the interagency committee.

To access harvest units, Alternative 2 includes construction of 20.0 miles of new road, including approximately 1.1 miles of road across State of Alaska, Department of Natural Resource lands that would require an easement. Logs would be transported to a new log transfer facility, to be constructed on NFS lands at Bostwick Inlet. Logs would also be flown to log drops located around the south end of Gravina Island. The exact location of these log drops would be determined by the purchaser and require a State permit.

All project roads would be closed, and the log transfer facility would be decommissioned (the bulkhead and rock ramp removed) upon completion of harvest activities. A gate would be installed on the 8100000 mainline road, near the Bostwick LTF on National Forest System land, and an administrative closure would be enforced. Only necessary administrative use, such as regeneration surveys, thinning, and future timber sales, would be allowed. Roads would be maintained at Maintenance Level 1 (closed), where custodial maintenance is performed to protect the road investment and keep damage to adjacent resources to an acceptable level. Temporary roads would be decommissioned (permanently closed). Non-motorized travel would not be restricted.

Alternative 3

Alternative 3 was designed to respond to the subsistence issue (Issue B), which identified concerns for maintaining marine habitat in Bostwick Inlet and deer hunting throughout the island. Timber harvest and road construction were reduced in areas of popular subsistence use, high-value deer winter range, and in some headwater stream systems.

This alternative would harvest 92,220 CCF (38.8 MMBF) of timber from 60 units (Table R-1). The timber would be removed by helicopter, cable and shovel logging. It would convert 1,100 acres of old-growth stands to an even-aged condition, convert 284 acres to a two-aged condition, and convert 434 acres of old-growth stands to an uneven-aged condition.

The three small Old-growth Reserves would be modified as recommended by the interagency committee.

To access harvest units, Alternative 3 includes construction of 22.1 miles of new road, including 6.7 miles of road across DNR, Mental Health Trust, and Ketchikan Gateway Borough lands that would require an easement. The NFS-built road system would connect with an additional 1.65 miles of new road, planned to be built by the Borough, to reach the existing log transfer facility at the Pacific Log and Lumber sawmill on the Tongass Narrows. Logs would also be flown to log drops located around the south end of Gravina Island. The exact location of these log drops would be determined by the purchaser and require a State permit.

All project roads would be closed upon completion of harvest activities. A gate would be installed on the 8100000 mainline road, near the NFS boundary on National Forest System land, and an administrative closure would be enforced. Only necessary administrative use, such as regeneration surveys, thinning, and future timber sales, would be allowed. Roads would be maintained at Maintenance Level 1 (closed), where custodial maintenance is performed to protect the road investment and keep damage to adjacent resources to an acceptable level. Temporary roads would be decommissioned (permanently closed). Non-motorized travel would not be restricted.

Alternative 4

Alternative 4 was the original proposed action when scoping began and in the Draft EIS. It was designed to address timber supply and economics and provide roaded access to NFS lands on Gravina Island (Issues A and C). It would provide the largest volume of timber and the greatest number of jobs of the action alternatives, but is less cost-effective than Alternative 2 because of increased road construction and helicopter yarding. It would also maintain a portion of the logging road system as open post-harvest, to provide roaded access for recreational purposes.

This alternative would harvest 111,813 CCF (47.2 MMBF) of timber from 79 units (Table R-1). The timber would be removed by helicopter, cable and shovel logging. It would convert 1,244 acres of old-growth stands to an even-aged condition, convert 452 acres to a two-aged condition, and convert 522 acres of old-growth stands to an uneven-aged condition.

The three small Old-growth Reserves would be modified as recommended by the interagency committee.

To access harvest units, Alternative 4 includes construction of 22.2 miles of new road, including 4.3 miles of road across DNR, Mental Health Trust, and Ketchikan Gateway Borough lands that would require an easement. The NFS-built road system would connect with an additional 1.65 miles of new road, planned to be built by the Borough, to reach the log transfer facility at the Pacific Log and Lumber sawmill on the Tongass Narrows. Logs would also be flown to log drops located around the south end of Gravina Island. The exact location of these log drops would be determined by the purchaser and require a State permit.

After completion of harvest, the 8100000 and 8105000 mainline roads (15.6 miles) would remain open to provide roaded recreational opportunities. The remaining classified roads would be closed, and temporary roads would be decommissioned, as described for Alternatives 2 and 3.

Alternative 5

Alternative 5 was designed to emphasize retention of the roadless character of the island by not building any new roads (Issue D). All timber would be harvested with helicopter harvest systems, and flown to log drop locations. Consequently, the only units selected in this alternative are those accessible from salt water, in the southern and eastern portions of the project area.

Record of Decision

This alternative would harvest 33,507 CCF (14.2 MMBF) of timber from 36 units (Table 2-1, Alternative Map 5 at the end of this chapter). The timber would be removed entirely by helicopter harvest systems. It would convert 219 acres of old-growth stands to an even-aged condition, convert 144 acres to a two-aged condition, and convert 440 acres of old-growth stands to an uneven-aged condition.

The three small Old-growth Reserves would be modified as recommended by the interagency committee.

In this alternative, all harvested timber would be flown to log drops located around the south end of Gravina Island, so no log transfer facilities and no new road construction would be needed. The exact location of these log drops would be determined by the purchaser and require a State permit.

Alternative 6

Alternative 6 was developed in response to comments received on the Draft EIS. It was designed to emphasize water quality and protection of important fish and wildlife subsistence values (Issue B). It was also designed to offer a volume intermediate between Alternatives 3 and 5, to improve the range of volumes being analyzed.

This alternative would harvest 77,420 CCF (31.9 MMBF) of timber from 52 units (Table R-1). The timber would be removed by helicopter, cable and shovel logging. It would convert 937 acres of old-growth stands to an even-aged condition, convert 284 acres to a two-aged condition, and convert 341 acres of old-growth stands to an uneven-aged condition.

The three small Old-growth Reserves would be modified as recommended by the interagency committee.

To access harvest units, Alternative 6 includes construction of 17.4 miles of new road, including approximately 3.7 miles of road across State DNR, Mental Health Trust, and Ketchikan Gateway Borough lands that would require an easement. The NFS-built road system would connect with an additional 1.65 miles of new road, planned to be built by the Borough, to reach the log transfer facility at the Pacific Log and Lumber sawmill on the Tongass Narrows. Post-harvest road management and log drops would be the same as described for Alternative 3.

Environmentally Preferred Alternative

Based on a comparison of the alternatives and the discussion contained within Chapter 3 of the Final EIS, Alternative 1, the No-action Alternative, would cause the least environmental disturbance and is therefore the environmentally preferred alternative of all the alternatives studied in detail. Of the action alternatives, Alternative 5 is the environmentally preferred alternative, since it harvests the least amount of timber, has no road construction, and has the least effect on the project area's wildlife carrying capacity.

Table R-1
Comparison of Alternatives including Selected Alternative

Category	Alt. 1	Alt. 2	Alt. 3	Selected Alt.	Alt. 4	Alt. 5	Alt. 6
Proposed Actions							
Total volume harvested CCF (MBF) (excluding right-of-way) ¹	0	94,183 (39,740)	92,220 (38,748)	90,640 (37,900)	111,813 (47,178)	33,507 (14,198)	77,420 (31,860)
Acres harvested (excl. right-of-way)	0	1,801	1,818	1,807	2,218	803	1,562
Percent of suitable acres harvested	0	26%	27%	27%	33%	12%	23%
Even-aged silvicultural system	0	1,135	1,100	1,051	1,244	219	937
2-aged silvicultural system	0	262	284	312	452	144	284
Uneven-aged silvicultural system	0	404	434	444	522	440	341
Shovel acres harvested	0	126	126	117	126	0	74
Cable acres harvested	0	849	750	777	860	0	575
Helicopter acres harvest	0	826	942	913	1,232	803	913
Classified road construction (miles)	0	18.94	20.90	20.58	21.06	0	16.23
Temporary road construction (miles)	0	1.10	1.18	1.18	1.18	0	1.18
Issue A: Timber Economics							
Total logging cost (\$/CCF) ²	0	169.49	182.73	185.22	178.21	200.51	178.77
Net stumpage value (\$/CCF) ³	0	20.16	5.62	3.63	12.57	(5.39)	2.33
Direct employment (jobs/yr) ³	0	249	243	239	295	88	204
Issue B: Subsistence							
Possibility of significant restriction	No	Yes	Yes	Yes	Yes	No	Yes
Reduction in existing deer habitat	0	9%	8%	6%	11%	5%	5%
Potential activity in Bostwick Inlet ⁴	None	LTF & Barge	Barge	Barge	Barge	Barge	Barge
Issue C: Access Management							
Road miles open to motorized vehicles in the project area ⁵	0	0	0	11.8	15.6	0	0
One-time cost to close roads	0	315,400	343,800	162,200	99,000	0	273,300
Annual cost to maintain roads	0	6,220	6,873	16,680	19,993	0	5,411
Issue D: Roadless Character							
Reduction in roadless area from harvest and roads (percent)	0	25	20	20	24	0	19
Concern: Fish Habitat and Water Quality							
Class I and II stream crossings	0	16	14	14	15	0	12
Class III stream crossings	0	12	9	9	12	0	9
Concern: Small Old-growth Reserves							
Modification implemented	0	Yes	Yes	Yes	Yes	Yes	Yes
Concern: Scenic Integrity							
Viewsheds meeting higher VQO than Forest Plan S&G, post-timber harvest ⁶	12	6	5	5	5	6	5

¹ Includes sawlog and utility.

² With optional removal of utility logs.

³ Expected value at current market conditions, NEAT, Second Quarter 2003.

⁴ Helicopter units may utilize barging locations in the vicinity of Bostwick Inlet.

⁵ The Selected Alternative allows seasonal motorized use, May through July.

⁶ Viewsheds will meet a standard higher than required in the Forest Plan, post timber harvest, e.g. if the Forest Plan VQO is Modification and the proposed harvest in a viewshed meets a Partial Retention VQO, then the VQO met is higher than the Forest Plan S&G.

Source: 2003, 2004

Reasons for Not Selecting Other Alternatives

I did not select Alternative 1, since environmental analysis showed that the desirable outputs of the Purpose and Need could be achieved without unreasonable effects to the ecological and human environments. These effects are described under the reasons for this decision and in Chapter 3 of the Final EIS.

I did not select Alternative 2 primarily because comments on the Draft EIS and in the testimony taken at the subsistence hearings identifying Bostwick Inlet as a valuable subsistence area. The construction of an LTF in Bostwick Inlet was a concern to many commenters.

A modified version of Alternative 3 was selected. The modifications were made to reduce the impacts to deer winter range and to the marine environment of Bostwick Inlet, and to improve sale economics. The road system will be maintained as seasonally open to provide recreational access.

I did not select Alternative 4 primarily because of its potential impacts to the marine environment of Bostwick Inlet, and the impacts of an open road system on subsistence hunting of deer.

I did not select Alternative 5 because it is only economically feasible in the best of market conditions or if additional measures (i.e., export of red cedar) are utilized. It relies entirely on helicopter yarding. This alternative also did not provide sufficient volume to adequately address the Purpose and Need.

I did not select Alternative 6 because it did not provide sufficient volume to adequately address the Purpose and Need. Additional timber could be supplied, and additional jobs supported in the local economy, without substantial additional environmental impact.

Alternatives Not Considered in Detail

In addition to the alternatives described above, several more alternatives were considered during the analysis but eliminated from detailed study. These alternatives were discussed during the development of the alternatives. Some of them were suggested by comments received through public scoping. Some of the aspects of the ideas were modified and used in conjunction with the alternatives considered in detail. Other alternatives did not meet Forest Plan direction for this project. A summary of these alternatives, and the reasons they were not analyzed in detail, can be found in Chapter 2 of the Final EIS, and further information is available in the project record.

Planning Record

The planning record for this project includes the Draft EIS, Final EIS, Forest Plan and material incorporated by reference, and all materials produced during the environmental analysis of this project. The planning record is available for review at the Ketchikan-Misty Fiords Ranger District.

Mitigation

Mitigation measures are prescribed to avoid, reduce, or eliminate the adverse effects of actions. These measures were applied in the development of the project alternatives, including the Selected Alternative, and in the design of the harvest units and road corridors. The Mitigation Measures section of Chapter 2 of the Final EIS, and Appendix 2 (Unit Cards) of the Record of Decision discusses mitigation measures for all alternatives.

Mitigation measures applicable to the Selected Alternative include measures contained in the Standards and Guidelines of the Forest Plan, and applicable Forest Service Manuals and Handbooks. The Final EIS includes site-specific mitigation measures described in Chapter 2 and unit and road cards in Appendices 2 and 3 of the Record of Decision. These measures are adopted as part of this decision and will be implemented. Measures to avoid or lessen adverse environmental effects of the project have been incorporated into the Selected Alternative.

Monitoring

A monitoring program is the process by which the Forest Service can evaluate whether the resource management objectives of the final environmental documents have been implemented as specified and whether the steps identified for mitigating the environmental effects were effective. Project-level monitoring is specified in Chapter 2 of the Final EIS. These monitoring items are part of this decision and will be implemented.

Each monitoring item describes the objective of the monitoring, what will be done, how it will be done, and the approximate cost of the monitoring. Monitoring activities may reveal results that deviate from planned effects, in which case corrective actions are prescribed. The Ketchikan-Misty Fiords District Ranger is responsible for ensuring that project implementation, mitigation, monitoring, and enforcement are accomplished as specified in the Final EIS.

Findings Required By Law

National Forest Management Act

The National Forest Management Act (NFMA) requires specific determinations in this Record of Decision: consistency with existing Forest Plans and FSM 2410.3, R10 Supp. 2400-2002-1 (5/7/2002), a determination of clearcutting as the optimal method of harvesting, if used, and specific authorizations to create openings over 100 acres in size. Specific information and rationale used to develop unit prescriptions is shown on unit cards (Appendix 2 of the ROD), in Chapter 3 of the Final EIS, and in the planning record.

Clearcutting as the Optimal Method of Harvesting

The Forest Plan (p. 4-96 to 4-97) and Forest Plan EIS (Appendix G, p. G-7 to G-9) give guidance on when to use even-aged management. Clearcutting (an even-aged method) is used in this project to preclude or minimize the occurrence of potentially adverse impacts from windthrow. It is applied where windthrow potential is moderate to high. Clearcutting is also used to minimize mistletoe infestations, logging damage or other factors affecting forest health. Specific information and rationale for use of this prescription is shown in the Silvicultural prescriptions (which are a part of the project planning record), in the introduction to the unit cards and in the individual unit cards (Appendix 2 of this ROD), and in Chapter 3 of the Final EIS. Where used, this prescription has been deemed optimal related to site-specific considerations as described above.

Harvest Openings Over 100 Acres in Size

The Gravina Island timber sale project complies with all resource integration and management requirements of 36 CFR 219 (219.14 through 219.27), through application of Forest Plan standards and guidelines at the project level. No openings in excess of 100 acres will be created. Although Units 10, 17, and 45 will harvest timber from 103 acres up to 181 acres, they will be harvested using a combination of small clearcuts and partial harvest techniques. Reserve areas will be placed within units to break total opening size. Specific NFMA findings pertaining to silvicultural systems are included in Chapter 3 of the Final EIS and the project planning record.

Tongass Land and Resource Management Plan

This decision fully complies with the Forest Plan for the Tongass National Forest. I have reviewed the management direction, standards and guidelines, and the schedule of activities for the project area included in the Selected Alternative, and find the Selected Alternative to be consistent with these elements. The activities authorized in this decision are consistent with the standards and guidelines and management prescriptions of the Forest Plan.

Forest Service Transportation Final Administrative Policy (Roads Rule)

The Gravina Island Timber Sale Final EIS and this ROD have been prepared to be consistent with the Forest Service Transportation Final Administrative Policy, the *Tongass National Forest Level Road Analysis* (January 2003), and the Gravina Roads Analysis and Determination.

Tongass Timber Reform Act (TTRA)

Forest Plan Riparian Standards and Guidelines have been applied to the Gravina Island project, and no commercial timber harvest will occur within 100 feet of any Class I stream or any Class II stream flowing directly into a Class I stream, as required in Section 103 of the TTRA. The design and implementation direction for the Selected Alternative incorporates Best Management Practices (BMPs) and Forest Plan Standards and Guidelines for the protection of all stream classes.

Endangered Species Act

Actions authorized in the Selected Alternative are not anticipated to have a direct, indirect, or cumulative effect on any threatened or endangered species in or outside the Gravina Island Timber Sale project area. The National Marine Fisheries Service has concurred that the actions

described for the proposed project are not likely to adversely affect any aquatic threatened or endangered species. Consultation was done with the U.S. Fish and Wildlife Service and no terrestrial threatened or endangered species are known to occur in the Gravina Island Timber Sale project area. A combined Biological Assessment (BA) and Biological Evaluation (BE) was prepared for the Gravina Island Timber Sale, as required by Section 7 of the Endangered Species Act (ESA), as amended, and the USDA Forest Service Threatened, Endangered, and Sensitive Plant and Animal Species Policy (FSM 2670). The complete BA/BE is included as Appendix D of the Final EIS. I have determined that this action will not have any adverse impacts on any threatened or endangered species.

Bald Eagle Protection Act

A Memorandum of Understanding (MOU) between the Forest Service and the U.S. Fish and Wildlife Service to facilitate compliance with the Bald Eagle Protection Act restricts management activities within 330 feet of an eagle nest site. The Selected Alternative is not anticipated to have a significant direct, indirect, or cumulative effect on any bald eagle habitat.

Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat)

The Magnuson-Stevens Fishery Conservation and Management Act requires a determination on the effects of the Gravina Island Timber Sale project on Essential Fish Habitat. The potential effects of the project on Essential Fish Habitat are discussed in Chapter 3 of the Final EIS. This discussion includes a description of the Essential Fish Habitat in the project area, a description of the proposed activities, and a description of the proposed mitigation measures that will be implemented to protect these essential habitats.

The descriptions and the analysis lead me to a determination that the Gravina Island Timber Sale may adversely affect Essential Fish Habitat, but this risk is minimized through the implementation of Forest Plan Standards and Guidelines and Best Management Practices.

In accordance with the agreement of August 25, 2000 between the Forest Service and the National Marine Fisheries Service for consultation on Essential Fish Habitat, the Draft EIS was provided to the Service to initiate formal consultation. The National Marine Fisheries Service did not respond to the discussion or the determination in the Draft EIS during the comment period. Formal Essential Fish Habitat consultation process was satisfied through a letter dated January 7, 2003, in accordance with the agreement between the National Marine Fisheries Service and the Forest Service. This letter was the Forest Service response to the NMFS's conservation recommendations.

National Historic Preservation Act

Heritage resource surveys of various intensities have been conducted in the project area, following inventory protocols approved by the Alaska State Historic Preservation Officer. The State Historic Preservation Officer has been consulted, in accordance with Section 106 of the NHPA and 36 CFR Part 800. I have determined that there will be no effects on known heritage resources.

Native communities have been contacted and public comment encouraged. The Forest Service has satisfied the consultation process with the State Historic Preservation Officer. Forest Service timber sale contracts contain enforceable measures for protecting any undiscovered heritage resource that might be encountered during sale operations. See discussion under Heritage Resources in Chapter 3 of the Final EIS.

Federal Cave Resource Protection Act of 1988

The actions in the Selected Alternative will not have a direct, indirect, or cumulative effect on any significant cave in the Gravina Island Timber Sale project area. No cave resources have been documented in the project area and no caves were discovered during fieldwork.

Alaska National Interest Lands Conservation Act (ANILCA) Section 810, Subsistence Evaluation and Findings

A subsistence evaluation was conducted for the alternatives considered in detail, in accordance with ANILCA Section 810. ANILCA 810 subsistence hearings were conducted during the comment period for the Gravina Island Timber Sale Draft EIS. The hearing transcripts are published as Appendix C of the Final EIS.

The review of the subsistence hearing testimony, comments from the public, and the analysis conducted for the Final EIS indicate that there is a significant possibility of a significant restriction on subsistence uses as a result of this project, primarily due to the increased access provided by the new road construction. However, all temporary roads will be decommissioned after harvest activities are completed, and the mainline road will be closed by administrative order during the deer hunting and wolf trapping seasons (generally August 1 through March or April). See the Subsistence section of Chapter 3 of the Final EIS.

Subsistence Determinations

Section 810 (a)(3) of ANILCA requires that when a use, occupancy, or disposition of public lands may result in a significant possibility of a significant restriction, a determination must be made whether (1) such a restriction is necessary, consistent with sound management principles for the utilization of public lands, (2) the proposed activity involves the minimum amount of public lands necessary to accomplish the purposes of the use, and (3) reasonable steps will be taken to lessen adverse impacts on subsistence uses and resources resulting from the actions.

Necessary, Consistent with Sound Management of Public Land: The Selected Alternative has been examined to determine whether the associated potential restriction to subsistence use is necessary, consistent with the sound management of public lands. In this regard, the laws and direction that have been considered include: (1) the National Forest Management Act of 1976 and its implementing regulations; (2) the Alaska National Interest Lands Conservation Act (ANILCA) of 1980; (3) the Tongass Land and Resource Management Plan; (4) the Tongass Timber Reform Act (TTRA) of 1990; (5) the Alaska State Forest Practices Act; (6) the Alaska Coastal Management Program, (7) the Multiple Use Sustained Yield Act (1960), and (8); USDA-FS Subsistence Management and Use Handbook (FSH 2609.25).

Management activities on National Forest System lands must provide for the multiple use and sustained yield of renewable forest resources in accordance with the Multiple-Use Sustained Yield Act of 1960 (the Act). Multiple use is defined as “the management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people (36 CFR 219.3). The alternatives presented in the Final EIS represent different ways of managing the resources of the Gravina Island Timber Sale project area in combinations that are intended to meet these needs. Each provides a different mix of resource uses and opportunities, and each has some potential to affect subsistence uses. Given the framework and emphasis of the Selected Alternative, the possibility of a restriction is necessary, consistent with sound management of public land.

ANILCA Title VIII places an emphasis on the maintenance of subsistence resources and lifestyles. However, the Act also provides for adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people and recognizes that public lands are necessary and appropriate for more intensive uses. The Act also required the Forest Service to make available 4.5 billion board feet per decade from the Tongass National Forest. The TTRA removed the 4.5 billion board foot requirement, but directs the Forest Service to seek to meet market demand for timber to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, and subject to applicable law.

As described in Appendix A of the Final EIS, the Selected Alternative is necessary as a component of the timber management program designed to implement the Forest Plan and to meet TTRA direction. There is currently a market demand for timber, a limited timber supply from other sources, and an under-utilized mill capacity in the region. The volume from the

Selected Alternative is a component of the 10-year timber sale schedule which attempts to provide timber to industry in an even flow over the planning cycle. The Selected Alternative can help meet the Forest Plan and TTRA objectives, while also providing reasonable protection measures for forest resources, especially for subsistence. It is consistent with the Forest Plan, laws, regulations, policies, public needs, and the capabilities of the land.

From the analysis of the information presented in the Final EIS and ROD, and the guidance provided by the documents and laws listed above, I have determined that the actions involved in the implementation of the Selected Alternative are necessary, consistent with sound management of public lands and strike the best balance between meeting the needs of the public and protecting the forest resources.

Amount of Land Necessary to Accomplish the Purpose of the Proposed Action: The amount of public land involved to implement the Selected Alternative (considering sound multiple-use management of public lands) is the minimum necessary to accomplish the purpose of the Selected Alternative. Most of the Tongass National Forest is used by one or more rural communities for subsistence deer hunting purposes. It is not possible to lessen timber harvest in one area and concentrate it in another locale without impacting one or more rural communities' important subsistence use areas. In addition, harvestable populations of subsistence wildlife species could not be maintained in a natural distribution across the Forest if harvest were concentrated in specific areas. A well-distributed population of species is required by the National Forest Management Act and is one of the objectives of the Forest Plan.

The Forest Plan allocated many of the important subsistence use areas to land use designations that do not allow timber harvest. Other areas that are important to subsistence use were protected through standards and guidelines such as the 1,000-foot beach and estuary buffers and the stream-side Riparian Management Areas that do not allow timber harvest. Of the approximately 39,400 acres of National Forest System lands within the Gravina Island Timber Sale project area, the Forest Plan allocated 33 percent of the area to the non-development land use designations of Old-growth Habitat, which does not allow timber harvest, and the rest to development land use designations such as Timber Production (46 percent), and Scenic Viewshed (21 percent). These designations provide for resource use and development for commodity resources such as timber.

The Selected Alternative uses sound timber harvest unit design and logical extensions of the road system. The minimum amount of land and roading was used to resolve resource concerns while meeting the Purpose and Need for this project in a practical and efficient manner. The Selected Alternative proposes harvest on only 2.9 percent of Gravina Island (4.5 percent of the National Forest System land). Other alternatives involve less total land acreage but do not produce the mix and balance of resource uses described in the Forest Plan, TTRA, ANILCA and responds to public comment.

The Gravina Island Timber Sale project involves the minimum amount of public land necessary and strikes a balance between meeting the needs of the public and protecting forest resources.

Reasonable Steps to Lessen Adverse Impacts Upon Subsistence Uses and Resources: The Forest Plan took considerable steps to lessen adverse impacts to subsistence uses and resources. Forest Plan Standards and Guidelines protect important deer winter habitat. Other reasonable steps taken to lessen adverse impacts to subsistence resources include: the overall Forest Plan land use designation strategy, the Old-growth Reserve strategy, travel and access management planning, Forest Plan Standards and Guidelines for stream, beach and estuary buffers, and the use of silvicultural systems that maintain components of overstory tree canopy, such as two-aged and uneven-aged management.

The Selected Alternative proposes uneven or two-aged silvicultural systems in areas of high-value deer winter range, it avoids log transfer, road construction and harvest activity in the

vicinity of Bostwick Inlet, and it proposes road closure through administrative order during deer hunting season.

The Selected Alternative reflects a reasonable balance between the projected need for timber from the project area, the desire for roaded recreation, and the continued protection of subsistence uses and resources. Impacts on subsistence have been lessened throughout the design of the individual harvest units and road corridors, and through the formulation of the selected alternatives. I have determined that reasonable measures to lessen impacts on subsistence have been adopted to the maximum extent practicable while still meeting the Purpose and Need for this project.

Clean Water Act (1977, as amended)

Congress intended the Clean Water Act of 1972 (Public Law 92-500) as amended in 1977 (Public Law 95-217) and 1987 (Public Law 100-4) to protect and improve the quality of water resources and maintain their beneficial uses. Section 313 of the Clean Water Act and Executive Order 12088 of January 23, 1987 address Federal agency compliance and consistency with water pollution control mandates. Agencies must be consistent with requirements that apply to "any governmental entity" or private person. Compliance is to be in line with "all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution".

The Clean Water Act (Sections 208 and 319) recognized the need for control strategies for nonpoint source pollution. The National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), and the USDA Nonpoint Source Water Quality Policy (December 5, 1986) provide a protection and improvement emphasis for soil and water resources and water-related beneficial uses. Soil and water conservation practices (BMPs) were recognized as the primary control mechanisms for nonpoint source pollution on National Forest System lands. The Environmental Protection Agency supports this perspective in their guidance, "Nonpoint Source Controls and Water Quality Standards" (August 19, 1987).

The Forest Service must apply Best Management Practices that are consistent with the Alaska Forest Resources and Practices Regulations to achieve Alaska Water Quality Standards. The site-specific application of BMPs, with a monitoring and feedback mechanism, is the approved strategy for controlling nonpoint source pollution as defined by Alaska's Nonpoint Source Pollution Control Strategy (October 2000). In 1997, the State approved the BMPs in the Forest Service's Soil and Water Conservation Handbook (FSH Handbook 2509.22, October 1996) as consistent with the Alaska Forest Resources and Practices Regulations. This Handbook is incorporated into the Tongass Land Management Plan.

A discharge of dredge or fill material from normal silviculture activities such as harvesting for the production of forest products is exempt from Section 404 permitting requirements in waters of the United States, including wetlands (404(f)(1)(A)). Forest roads qualify for this exemption only if they are constructed and maintained in accordance with best management practices to assure that flow and circulation patterns and chemical and biological characteristics of the waters are not impaired (404(f)(1)(E)). The BMPs that must be followed are specified in 33 CFR 323.4(a). These specific BMPs have been incorporated into the Forest Service's Soil and Water Conservation Handbook under BMP 12.5. Forest roads kept open for public recreational use after completion of timber harvest activities do not generally qualify for this exemption.

The design of harvest units for the Selected Alternative were guided by standards, guidelines and direction contained in the Forest Plan, and applicable Forest Service Manuals and Handbooks. The unit cards and road cards (Appendices 2 and 3 of the ROD) contain specific details on practices prescribed to prevent or reduce non-point sediment sources. The Selected Alternative will require a Section 404 permit for roads kept open for public recreational use, for which an application will be submitted.

Monitoring and evaluation of the implementation and effectiveness of Forest Plan Standards and Guidelines and Best Management Practices will occur. Project activities are expected to meet all applicable State of Alaska Water Quality Standards Regulations.

Clean Air Act

Emissions anticipated from the implementation of any project alternative will be of short duration and are not expected to exceed State of Alaska ambient air quality standards (18 AAC 50).

Coastal Zone Management Act (CZMA)

The Coastal Zone Management Act of 1972 (CZMA), while specifically excluding Federal lands from the coastal zone, requires that a Federal agency's activities be consistent with the enforceable standards of a State's coastal management program to the maximum extent practicable when the agency's activities affect the coastal zone.

I have determined that the Gravina Island Timber Sale project may affect the coastal zone, and those Forest Plan Standards and Guidelines and mitigation measures applicable to the Gravina Island Timber Sale project meet or exceed the requirements of the State of Alaska Coastal Zone Management Plan. Therefore, the project is consistent to the maximum extent practicable with the enforceable policies of the Alaska Coastal Zone Management Program.

The Alaska Coastal Management Plan (ACMP) consistency review process was initiated upon publication of the Draft EIS through the Alaska Division of Governmental Coordination (currently the Alaska Department of Natural Resources, Office of Project Management and Permitting). A Project Clarification letter was submitted after analyzing responses to comments on the Draft EIS. As part of this process, a coordination meeting was held with the State of Alaska, including the Department of Fish and Game and the Department of Governmental Coordination, and the meeting agreements were confirmed in a letter from the Forest Service to DGC. The State replied that they would concur with our final consistency determination with the application of seasonal road closures through the deer hunting and wolf and marten trapping seasons, to further reduce impacts on wildlife habitat and subsistence; these have been incorporated into the Selected Alternative.

Executive Orders

Executive Order 11988 (Floodplains)

Executive Order 11988 directs Federal agencies to take action to avoid, to the extent practicable, the long and short-term adverse impacts associated with the occupancy and modification of floodplains.

Executive Order 11990 (Wetlands)

Executive Order 11990 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands.

Because wetlands are so extensive in the Gravina Island Timber Sale, it is not feasible to avoid all wetland areas. Wetland soils not meeting Forest Plan criteria for timber harvest suitability are excluded from the harvest base. Soil moisture regimes and vegetation on some wetlands may be altered in some harvest units; however, the affected wetlands will meet wetland classification and will still function as wetlands in the ecosystem.

Road construction across wetlands is permitted within Alaska. Such construction requires the filling-in of wetlands and creates permanent loss of wetland habitat. Effects to wetlands are minimized through the application of specific Best Management Practices. Road construction through wetlands is avoided where possible. See Chapter 3, Wetlands, for more extensive discussion of the wetlands.

Executive Order 12898 (Environmental Justice)

Executive Order 12898 directs Federal agencies to identify and address the issue of environmental justice, i.e., human health and environmental effects of agency programs that disproportionately impact minority and low-income populations. The Executive Order specifically directs agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish or wildlife. Implementation of any project alternative may cause disproportionate adverse environmental effects to minority or low-income populations in Metlakatla due to the effects to subsistence. However, the Selected Alternative takes a broad range of measures to reduce or mitigate these impacts.

Executive Order 12962 (Recreational Fisheries)

Executive Order 12962 requires Federal agencies to evaluate the effects of proposed activities on aquatic systems and recreational fisheries. With the application of Forest Plan Standards and Guidelines, including those for riparian areas, no significant adverse effects to freshwater or marine resources will occur. Recreational fishing opportunities could increase somewhat through improved access to some streams. Aquatic systems would remain essentially the same because aquatic habitats are protected through implementation of BMPs and riparian buffers. However, most recreational fishing around Gravina Island occurs by boat in saltwater, and any adverse effects would be minimal.

Executive Order 13007 (Indian Sacred Sites)

Executive Order 13007, Indian Sacred Sites, provides presidential direction to Federal agencies to give consideration to the protection of American Indian sacred sites and to allow access where feasible. In a government-to-government relationship, the tribal government is responsible for notifying the agency of the existence of a sacred site. A sacred site is defined as a site that has sacred significance due to established religious beliefs or ceremonial uses, and which has specific, discrete, and delineated location, which has been identified by the tribe. No specific sacred site locations have been identified by tribal governments or their authorized representatives in the project area.

Executive Order 13186 (Migratory Birds)

The Migratory Bird Treaty Act of 1918 (amended in 1936 and 1972) prohibits the taking of migratory birds, unless authorized by the Secretary of Interior. The law provides the primary mechanism to regulate waterfowl hunting seasons and bag limits, but its scope is not just limited to waterfowl. Over 100 species of birds migrate from the other states and countries to Alaska to breed, nest, and fledge their young. Most of these birds fly to interior or northern Alaska, and only pass through the project area on the way to their breeding grounds. The migratory species that may stay in the area utilize most, if not all, of the habitats described in the analysis for breeding, nesting, and raising their young. The effects on these habitats were analyzed for this project.

None of the action alternatives is anticipated to have a significant direct, indirect, or cumulative effect on any migratory bird species for this project area. There may be direct minor effects on individuals or small groups and their nests from the harvest of timber or the disturbance caused by harvest activities.

Federal and State Permits, Licenses, and Certifications

Prior to implementation of the proposed timber sale, various permits must be obtained from Federal and State agencies. Administrative actions on these permits will be initiated after the EIS is filed with the Environmental Protection Agency (EPA). The agencies and their responsibilities are listed below.

U.S. Army Corps of Engineers

Section 404 of the Clean Water Act (1977, as amended) requires a permit from the Corps of Engineers before filling or dredging in wetlands and tidelands. A 404 permit will be needed for maintaining project roads as open for public recreational use. Under an exemption, no 404 permits are needed for timber harvest that is conducted for silvicultural purposes.

U.S. Environmental Protection Agency

A Storm Water Discharge Permit and a National Pollutant Discharge Elimination System review (Section 402 of the Clean Water Act) will be needed for the Pacific Log & Lumber Company barge bulkhead facility.

Alaska Department of Environmental Conservation

DEC participates in cooperative water quality management through Section 319 of the Clean Water Act and a memorandum of Agreement with the Forest Service. They also issue a certification of compliance with Alaska Water Quality Standards under Section 401 of the Clean Water Act. These will be needed for the Pacific Log & Lumber Company barge bulkhead facility.

Alaska Department of Natural Resources

A right-of-way agreement for access and maintenance will be needed for new road construction on DNR lands.

Alaska Mental Health Trust

A right-of-way agreement for access and maintenance will be needed for new road construction on AMHT lands.

Ketchikan Gateway Borough

A right-of-way agreement for access and maintenance will be needed for new road construction on Borough lands.

Implementation Process

Implementation of this decision may occur no sooner than 50 days following publication of the legal notice of the decision in the *Juneau Empire*, published in Juneau, Alaska. The timber from this project is planned to be offered in multiple timber sales starting in 2006.

This project will be implemented in accordance with Forest Service Manual and Handbook direction for Timber Sale Project Implementation in FSM 2431.3 and FSH 2409.24. This direction provides a bridge between project planning and implementation and will ensure execution of the actions, environmental standards, and mitigation approved by this decision, and compliance with TTRA and other laws. All applicable Best Management Practices (BMPs) will be applied to the Selected Alternative.

Implementation of all activities authorized by this Record of Decision will be monitored to ensure that they are carried out as planned and described in the Final EIS.

Appendices 2 and 3 to this Record of Decision contain the Selected Alternative's unit and road cards. These cards are an integral part of this decision because they document the specific resource concerns, management objectives, and mitigation measures to govern the layout of the harvest units. These cards will be used during the implementation process to assure that all aspects of the project are implemented within applicable standards and guidelines and that resource impacts will not be greater than those described in the Final EIS. Similar cards will be used to document any changes to the planned layout as the actual layout and harvest of the units occurs with project implementation.

The implementation record for this project will display:

- Each harvest unit as actually implemented,

- Any proposed changes to the design, location or other mitigation measures for the project, and
- Authorization of the proposed changes.

Process for Change During Implementation

Proposed changes to the authorized project actions will be subject to the requirements of the National Environmental Policy Act (NEPA), the National Forest Management Act of 1976 (NFMA), Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA), the Tongass Timber Reform Act (TTRA), the Coastal Zone Management Act (CZMA), and other laws concerning such changes.

In determining whether and what kind of NEPA action is required, the Forest Supervisor will consider the criteria set forth in the Code of Federal Regulations (40 CFR 1502.9(c)), and Forest Service Handbook (FSH) 1909.15, sec. 18 for determining whether to supplement an existing Environmental Impact Statement (EIS). In particular, the Forest Supervisor will determine whether the proposed change is a substantial change to the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas of specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

The intent of field verification is to confirm inventory data and to determine the feasibility and general design and location of a unit or road, not to locate final boundaries or road locations. Minor changes are expected during implementation to better meet on-site resource management and protection objectives. Minor adjustments to unit boundaries are also likely during final layout for the purpose of improving logging system efficiency. This will usually entail adjusting the boundary to coincide with logical logging setting boundaries. Many of these minor changes will not present sufficient potential impacts to require any specific documentation or other action to comply with applicable laws. Some minor changes may still require appropriate analysis and documentation to comply with FSH 1909.15, sec. 18.

Right to Appeal

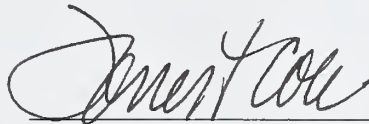
This decision is subject to administrative appeal. Organizations or members of the general public may appeal this decision according to Title 36 Code of Federal Regulations (CFR) part 215. The appeal must be filed within 45 days of the date that legal notification of this decision is published in the *Juneau Empire*, the official newspaper of record. The written Notice of Appeal must be filed with:

Regional Forester, Alaska Region
U.S. Department of Agriculture, Forest Service
P.O. Box 21628
Juneau, AK 99802-1628

It is the responsibility of those who appeal a decision to provide the Regional Forester with sufficient written evidence and rationale to show why the decision by the Forest Supervisor should be changed or reversed. This written Notice of Appeal must:


- State that the document is a Notice of Appeal filed pursuant to 36 CFR Part 215;
- List the name, address, and, if possible, the telephone number of the appellant;
- Identify the decision document by title and subject, date of the decision, and name and title of the Responsible Official;
- Identify the specific change(s) in the decision that the appellant seeks or portion of the decision to which the appellant objects;
- State how the Responsible Official's decision fails to consider comments previously provided, either before or during the comment period specified in 36 CFR 215.6 and, if applicable, how the appellant believes the decision violates law, regulation or policy.

For additional information concerning this decision, contact Jerry Ingersoll, District Ranger, Ketchikan-Misty Fiords Ranger District, 3031 Tongass Avenue, Ketchikan, AK 99901, or call (907) 225-2148.



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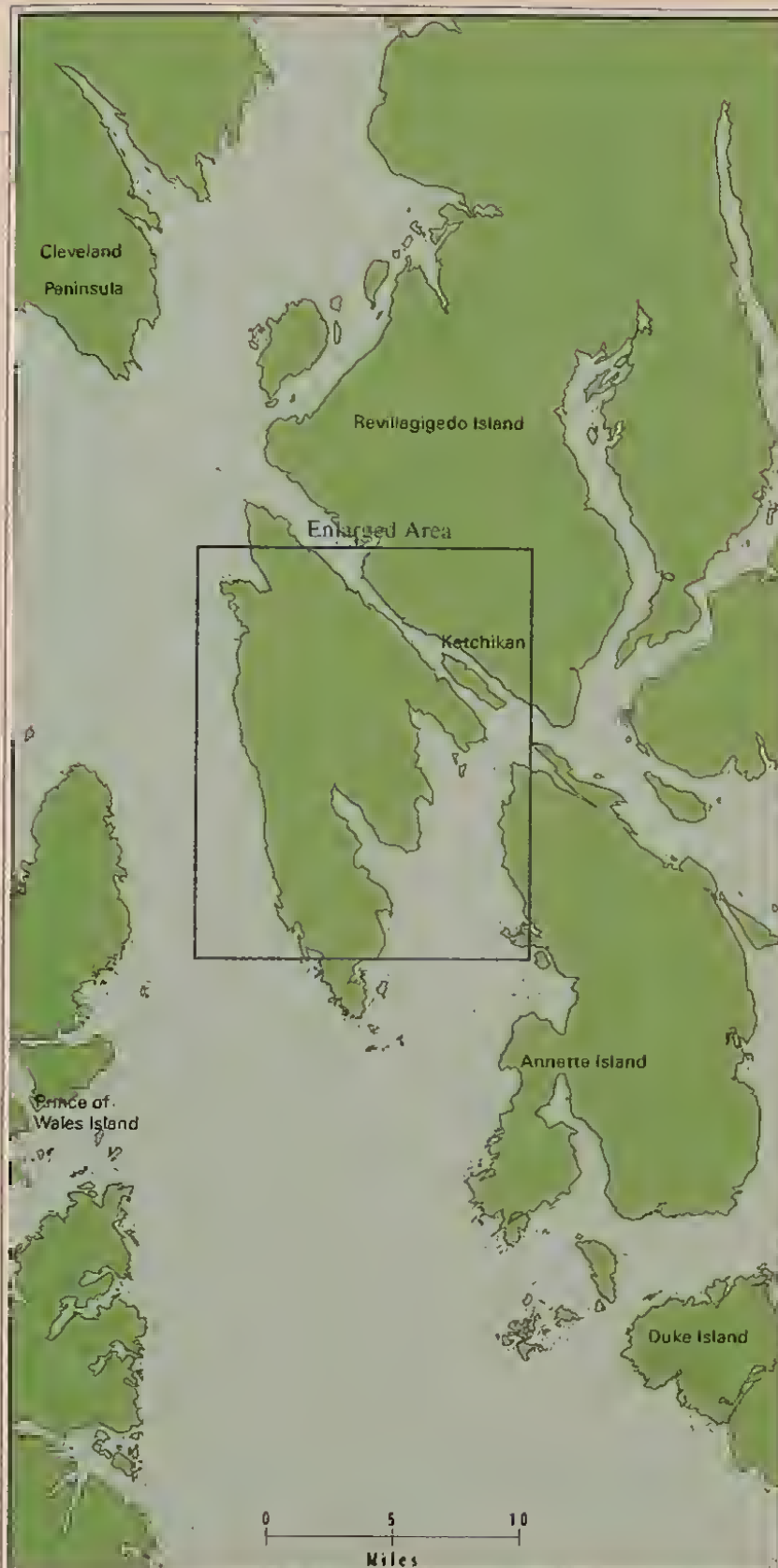
Forest Supervisor



Date

Record of Decision

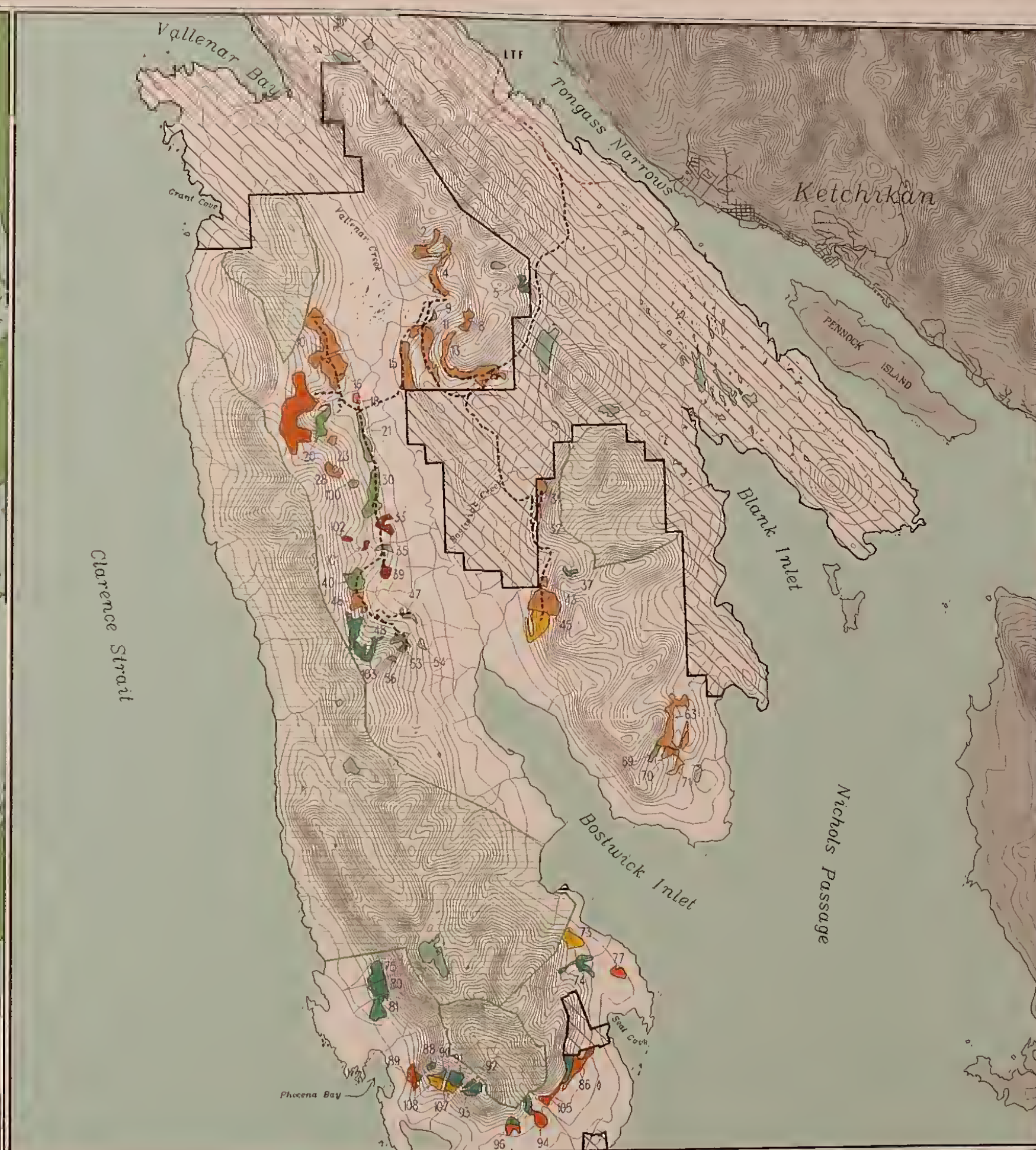
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DISCLAIMER

The Forest Service cannot assure the reliability or suitability of this information for a particular purpose. Original data elements were compiled from various sources. Spatial information may not meet National Map Accuracy Standards. This information may be updated, corrected, or otherwise modified without notification. For additional information about this data, contact the Tongass National Forest.

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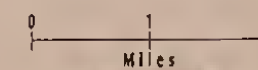


Selected Alternative Record of Decision

- Proposed gate location
- 101 Unit Number
- LTF Log Transfer Facility
- Project Area
- Non - NFS Ownership
- Recommended Old Growth Reserve Locations
- Group Selection Harvest Rx
- Single Tree Selection Harvest Rx
- 2 aged Clearcut w/ Reserves Harvest Rx
- Clearcut Harvest Rx
- Clearcut w/ Reserves Harvest Rx
- Seed Tree Cut Harvest Rx
- Salt Water
- Lakes/Ponds
- Proposed Roads to be Constructed
- Approximate Location of NON - NFS Constructed Road from Airport to Seley's Gravina Mill Site (PROPOSED)
- Class I stream
- Class II stream
- Class III stream



Contour Interval - 100 feet



Appendix 1

Nonsignificant Forest Plan Amendment

Introduction

The purpose of this study is to investigate the effects of the proposed system on the performance of the participants.

The results of the study are presented in the following sections.

Appendix 1

Nonsignificant Forest Plan Amendment

Small Old-growth Habitat Reserve Adjustments in VCUs 7610/7630 and 7650

Based on the project level analysis as described in the Old-growth Habitat Management Prescription and Appendix K of the Tongass National Forest Land and Resource Management Plan (Forest Plan), the locations of small Old-growth Habitat Reserves (OGRs) on Gravina Island were reviewed by an interagency group of biologists. Two Gravina value comparison units (VCUs) do not require small OGRs because they contain a medium OGR. Changes were recommended for the small OGRs in the remaining three VCUs for the following primary reasons: 1) 7610 did not meet the minimum OGR size requirement; 2) 7640 did not meet the minimum productive old growth (POG) size requirement; and 3) 7650 had much of its POG in linear features.

The interagency review team recommended expanding the boundaries of the reserves in VCUs 7610 and 7640. They recommended expanding the southern portion of the VCU 7610 reserve into VCU 7630 to encompass the upper reaches of the Grant Creek watershed. They also recommended changing the location of the small reserve in VCU 7650 to better maintain connectivity with the medium OGR and to protect higher-value deer winter range. Table A1-1 summarizes the proposed changes to the small reserves in VCUs 7610, 7640, and 7650. As proposed, each small reserve would exceed Forest Plan minimum requirements for size and acres of POG. The Interagency Review Report is located in the Gravina Island project planning record.

Table A1-1
Proposed Changes to Gravina Island Small Old-growth Reserves

VCU	Forest Plan Minimum Acres		Current Small Reserve Acres		Recommended Small Reserve Acres	
	Total	POG ¹	Total	POG	Total	POG
7610	818	409	783	493	1,040 ²	610 ²
7640	650	400	1,215	331	1,427	442
7650	824	412	1,036	559	867	722
Total	2,292	1,221	3,034	1,383	3,334	1,774

¹POG = Productive Old Growth forest.

²The small reserve representing VCU 7610 contains 231 acres and 117 POG acres in VCU 7630 to meet Forest Plan minimum acres.

Source: Small Old-growth Habitat Reserve Review, Planning Record

Significance

The Secretary of Agriculture's implementing regulation indicates the determination of significance is to be "[b]ased on an analysis of the objectives, guidelines, and other contents of the forest plan" (36 CFR 219.10(f)). The Forest Service has issued guidance for what constitutes a "significant amendment" under the National Forest Management Act (NFMA). This guidance, in Forest Service Handbook (FSH) 1909.12, Chapter 5.32, identifies four factors to be used in determining whether a proposed change to a Forest Plan is significant or not significant. These four factors are: timing; location and size; goals, objectives, and outputs; and management prescriptions. The Alaska Region issued a Supplement to FSH 1909.12, Chapter 5.32, effective October 17, 1990 that includes an additional factor that can be considered in determining the significance of a Forest Plan Amendment. This additional factor deals with technical changes. An analysis of the factors is presented below.

Timing

The timing factor takes into account when, during the life of the Forest Plan, the proposed change is to take place. Generally, the later the change in the life of the Plan, the less likely it is to be significant.

The Forest Plan revision was completed in 1997, so this change is proposed early in the life of the Plan. However, the Old-growth Habitat Management Prescription in the Forest Plan recognizes the small mapped reserves have received differing levels of field review and integration of site-specific information in their design. The intent of the Forest Plan was for project-level environmental analysis, for project areas that include or are adjacent to mapped Old-growth Habitat Reserves, to evaluate the size, spacing and habitat composition of mapped reserves. Forest Plan Appendix K gives specific instruction for how to make these changes. Clearly, modifications to the Old-growth Habitat Land Use Designation (LUD) were anticipated in the Forest Plan. For these reasons, I have determined that these proposed changes relevant to timing are not considered significant.

Location and Size

This factor takes into account the location and size of the area involved in the change, and the affected area's relationship to the overall planning area. Generally, the smaller the area affected, the less likely the change is to be a significant change in the Forest Plan.

The areas added to the small Old-growth Habitat Reserves were taken from Scenic Viewshed LUDs adjacent to the existing reserves. The area removed from the Old-growth Habitat LUD in VCU 7650 will change to the Scenic Viewshed LUD. The net change in total acres for the project area is an increase of 300 acres for the Old-growth Habitat LUDs, which is not considered significant with respect to the size of the overall planning area within the Tongass National Forest (17 million acres).

The boundaries of the Old-growth Habitat Reserves were modified to better address the Forest Plan objectives for biodiversity. VCU-specific rationale is addressed in the Interagency report which is available in the project planning record.

The recommended changes result in a reduction of 345 acres of suitable timber.

Goals, Objectives, and Outputs

This factor examines whether the change alters long-term relationships between the levels of goods and services projected by the Forest Plan. In most cases, changes in outputs are not likely to be a significant change in the Forest Plan unless the change would forego the opportunity to achieve an output in later years.

Goals

The Forest Plan goal for Biodiversity is to maintain healthy forest ecosystems; and, to maintain a mix of habitats at different spatial scales (i.e. site, watershed, island, province and forest) capable of supporting the full range of naturally occurring flora, fauna, and ecological processes native to Southeast Alaska. The adjustment to these three reserves is consistent with the goals of the Forest Plan.

Objectives

The Forest Plan objectives are to maintain a Forest-wide system of old-growth forest habitat (includes reserves, non-development LUDs, and beach, estuary and riparian corridors) to sustain old-growth associated species and resources; and, to ensure that the reserve system meets the minimum size, spacing and composition criteria described in Appendix K of the Forest Plan. The adjustments to these three reserves were specifically designed to meet the Forest Plan Objectives.

Outputs

Adjustment of these three reserves will have a relatively minor effect on the Forest Plan outputs on a Forest-wide basis, primarily because the change in the acres of LUDs that allow scheduled timber harvest is relatively small. There was a net decrease of 345 acres of forest lands classed as suitable for timber production on 26,344 acres of development LUDS within this project area, which is negligible when considered across the Tongass National Forest.

Management Prescriptions

This factor accounts for whether the change in a management prescription is only for a specific situation or whether it would apply to future decisions throughout the planning area. It evaluates how the change alters the desired future condition of the land and resources or the anticipated goods and services to be produced.

None of the standards and guidelines associated with the management prescriptions has been changed as a result of this amendment. The changes to the three mapped small Old-growth Habitat Reserves apply only to this location, however these changes also would apply in future management. The proposed amendment fulfills the desired future condition for the Old-growth Habitat LUD Management Prescription as defined in the Forest Plan and would not significantly affect the goods and services produced.

Technical Changes

Technical changes to a Plan's management direction may be made on the basis of new information about the actual resource characteristics of the area. This category does not apply to this case.

Cumulative Changes

The Gravina Island Timber Sale EIS is one of 20 National Environmental Policy Act (NEPA) decisions as of June 2004, to make non-significant amendments to the Forest Plan by

modifying LUD boundaries. These changes are tracked with a monitoring question posed by the Forest Plan and are part of the Annual Monitoring and Evaluation Report.

The Niblack Environmental Assessment (EA) changed a Wild River non-development LUD to Old-growth Habitat and Timber Management LUDs. The other amendments involved enlargement or reduction of Old-growth Habitat LUDs, usually exchanging acres with one of the development LUDs in order to more effectively meet Forest Plan objectives. Usually, whenever an Old-growth Habitat LUD was expanded, there was a corresponding reduction of acres suitable for timber harvest. Likewise, an Old-growth Habitat LUD size reduction usually meant an increase in suitable acres. Often non-forest or low-productive forest lands are included in the modification of shape of a small reserve due to the natural fragmentation of forest in Southeast Alaska.

While the LUD changes within each project decision constituted non-significant Forest Plan amendments, Table A1-2 displays the accumulated effect on suitable acres for all projects. For each project, the table displays acres that were changed from a non-development LUD to a resource development LUD, or from a development LUD to Old-Growth Habitat and the net change in acres suitable for timber management. The net change in suitable acres represents less than 1 percent of the suitable land base.

Table A1-2
Effects of Forest Plan Amendments on Acres Suitable for Timber Harvest as of January 2004

Project	Non-development to Development LUD Suitable Acres	Development to Non-development LUD Suitable Acres	Net Change in Suitable Acres
Gravina Island	290	635	-345 acres
Madan EIS	377	1,501	-1,124
Finger Mountain EIS	0	593	-593
Cholmondoley EIS	894	6,873	-5,979
Wookpecker EIS	180	130	+50
Polk Small Sales EA	0	153	-153
Threemile EIS	458	826	-368
Fire Cove Salvage	186	633	-447
Salty EA	99	126	-27
Luck Lake EIS	257	794	-537
Doughnut EIS	0	19	-19
Kuakan EIS	416	542	-126
Sea Level EIS	185	500	-315
Canal Hoya EIS	0	151	-151
Chasina EIS	0	78	-78
Control Lake EIS	446	142	+304
Crystal Creek EIS	481	1,153	-672
Nemo Loop EA	177	932	-755
Todahl Backline EA	2	363	-361
Niblack EA	252	0	+252
Total	4,700	16,144	-11,444

Conclusions

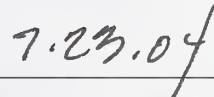
Based on a consideration of the factors above, I conclude adoption of this amendment is not significant in the context of the National Forest Management Act. This amendment is fully consistent with current Forest Plan goals and objectives. The amendment provides added detail on implementation of the Old-growth Habitat Management Prescriptions of the Forest Plan.

I hereby amend the Forest Plan with this non-significant amendment by adjusting the three small Old-growth Habitat Reserves as shown on the Record of Decision map and documented in the project planning record for the Gravina Island Timber Sale Final EIS (see Figure A1-1, below).



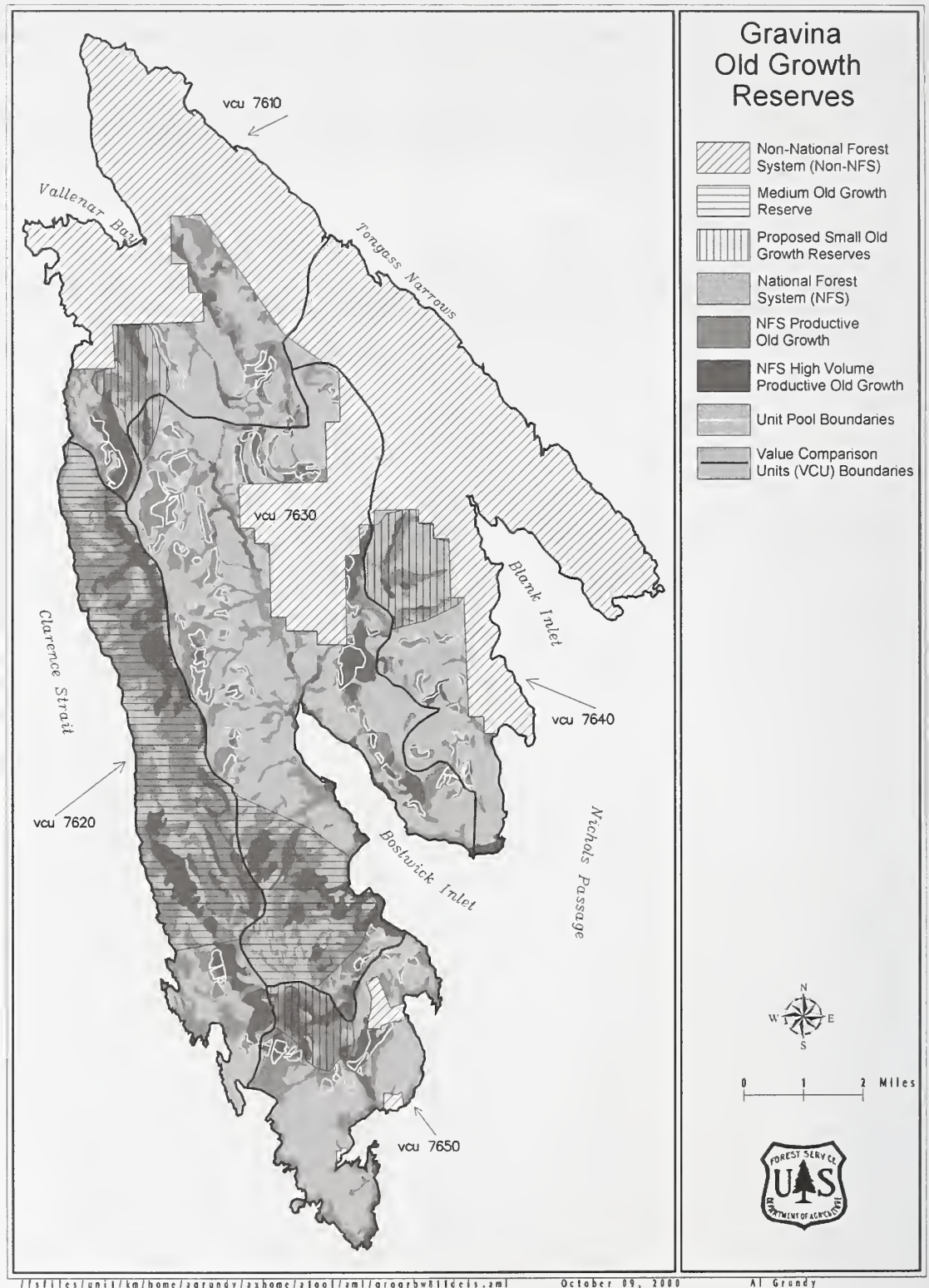
FORREST COLE

Forest Supervisor



Date

Figure A1-1
Gravina Island Project Old-growth Habitat Reserves



Source: GIS, A. Grundy, 2000

Appendix 2

Unit Cards

Appendix A

Answers



Appendix 2

Unit Cards

Appendix 2, Unit Cards, is used to explain site-specific information about each unit and any resource concerns and mitigations. Narrative cards and maps for each unit in this Record of Decision are in numerical order. The unit cards describe the silvicultural prescription, resource concerns, and mitigation measures for each unit.

For a comprehensive picture of the proposed units and roads for the Selected Alternative, refer to the fold-out map at the end of the Record of Decision.

The following sections provide background information for the unit cards. The Introduction to Unit Cards section explains information displayed in the individual unit cards, including silvicultural prescriptions, and definitions of terms used in scenery and fisheries resources. The General Mitigations Measures section summarizes mitigation measures that can be used for resource concerns. These mitigation measures can be either from the Forest Plan or project specific.

Introduction to Unit Cards

Silvicultural Prescriptions

Silvicultural prescriptions have been developed to meet the management objectives based on each site and the Forest Plan direction. These objectives may include retaining old-growth characteristics for biodiversity, protection of soils, watershed, wildlife habitat or scenery values or designing systems that are most economical for logging feasibility on a site.

Silvicultural prescriptions will include these unit cards as well as sale layout and marking guidelines for each unit that is included in the Gravina Island Timber Sale Record of Decision. Minor changes to boundary layout and to the prescriptions are expected during implementation to better meet on-site conditions. The harvest treatment descriptions on the unit cards are basic guidelines to achieve desired stand structure and to address resource concerns and logging system operability. The three different silvicultural systems used in management to achieve a desired stand structure are described below. Some of the prescriptions that can be used to achieve the desired silvicultural system are listed as well:

- **Uneven-aged Management:** A system that is used to maintain high forest cover, regeneration of desirable species, and development of trees through a range of diameter or age classes. Prescriptions to obtain this structure include single-tree selection (STS) and group selection (GS). Approximately 50 percent of the basal area of trees will be retained in these units.
- **Two-aged Management:** A system in which the majority of the trees in a harvest unit are cut in one entry and the rest (about 20 to 30 percent of the unit) are left as residual trees either singly or in patches. The residual trees remain unharvested to provide structural diversity, and older-aged trees within the second-growth stand. Two-aged clearcutting with reserves (2ACCR) is a prescription that can be used to obtain this stand structure.
- **Even-aged Management:** Most merchantable trees would be harvested. The objective is to create a fast-growing stand of trees to maximize wood fiber production. Some trees may be left to create future stand diversity if the largest trees can be removed safely. This can be achieved generally if the stand will be helicopter or shovel yarded.

Visual Quality Objectives

The stand would regenerate into a mostly single-aged stand. In some instances, trees are left in the unit to promote regeneration of a specified species. This type of prescription is called Seed Tree (ST). Other prescription types can include Even-aged Clearcut with Reserves (EACCR) or Clearcut (CC).

The following visual quality objectives for the Forest Plan provide standards for management based on the landscapes scenic characteristics and public viewing concern.

- Retention: Changes in the landscape must not be visually evident to the casual forest observer.
- Partial Retention: Changes in the; landscape may be visually evident, but must be integrated into and visually subordinate to the surrounding landscape and should not attract attention.
- Modification: Changes in the landscape may visually dominate the surrounding natural landscape, however they should be compatible with the surrounding landscape.
- Maximum Modification: Management activities may visually dominate the characteristic or surrounding landscape.

Scenery Standards and Guidelines by LUD

The guidelines for scenery differ within the three Land Use Designations (LUDs) that allow timber harvest. The LUDs in the Gravina Island project area are shown in the following:

For areas visible from Visual Priority Travel Routes and Use Areas:

<u>Distance Zone/LUD</u>	<u>Scenic Viewshed</u>	<u>Timber management</u>
Foreground (0-1/2 miles)	Retention	Modification
Middleground (1/2 – 3 to 5 miles)	Partial Retention	Maximum Modification
Background (3 to 5 miles and greater)	Partial Retention	Maximum Modification

For areas not visible from Visual Priority Travel Routes:

All areas - Maximum Modification VQO

The primary scenic objective for Scenic Viewshed LUD is to retain a natural-appearing landscape over time, if viewed from Visual Priority Travel Routes and Use Areas. The Timber Production LUD focuses on achieving visual characteristics similar to natural occurrences in the immediate viewing area while allowing a sustained yield of timber.

Visual Quality Objectives for Units in the Scenic Viewshed LUD:

<u>Retention/Partial Retention</u>	<u>Partial Retention</u>
Units- 77	Units- 73, 74, 75, 80, 81, 88, 89, 90, 91, 92, 93, 107, 108, 86, 94, 96, 105

Visual Quality Objectives for Units in the Timber Production LUD:

<u>Maximum Modification</u>
Units- 4, 5, 8, 9, 11, 13, 15, 39, 40, 45, 53, 54, 56, 63, 69

Water Quality and Fisheries

All known streams are shown on the unit card maps. These streams and any additional streams found during layout will be protected by following the Forest Plan Riparian Standards and Guidelines listed below. Class IV streams will be protected by following Best Management Practices. Timing restrictions for instream work are listed on the road cards.

Process Groups and Channel Types

A process group describes streams with similar interrelationships between watershed runoff, landform relief, geology, and glacial or tidal influences on erosion and deposition. A channel

type more precisely characterizes a stream and helps predict the probable responses to natural and human influences. Channel types incorporate other aspects such as gradient, pattern, stream bank incision and containment and riparian area vegetation communities. See the Forest Plan, Figure D-1 (page D-4) for a visual representation of the typical distribution of channel process groups. The following table shows the Forest Plan codes used on the unit card narratives. Each unit card summarizes the protection. Only the channel types found in the Gravina Island project area are listed.

Table A2-1
Channel Types in the Gravina Island Project Area

Process Group	Channel Type Code	Channel Type Description
Alluvial Fan	AF1	Moderate Gradient Alluvial Fan Channel
	AF2	High Gradient Alluvial Cone Channel
Flood Plain	FP3	Narrow Low Gradient Flood Plain Channel
High Gradient Contained	HC1	Shallowly Incised Muskeg Channel
	HC2	Shallowly to Moderately Incised Footslope Channel
	HC3	Deeply Incised Upper Valley Channel
	HC4	Deeply Incised Muskeg Channel
	HC5	Shallowly Incised Very High Gradient Channel
	HC6	Deeply Incised Mountain Slope Channel
Moderate Gradient Contained	MCI	Narrow Shallow Contained Channel
	MC2	Moderate Width and Incision Contained Channel
Moderate Gradient, Mixed Control	MM1	Narrow Mixed Control Channel
Palustrine	PA1	Narrow Placid Flow Channel

Source: Forest Plan, pages D-1 - D-3.

Riparian Management Areas

Stream buffers maintain biodiversity and productivity, streambank and stream channel processes, and the natural and beneficial qualities of large woody debris over the short and long term. Riparian Management Areas are areas of special concern to fish, other aquatic resources and wildlife. They are generally delineated as identified in the process group direction (RIP2, III, E).

Riparian Standards and Guidelines for Timber Harvest

The Tongass Timber Reform Act (TTRA) mandates the use of minimum 100-foot wide buffer strips along both sides of all Class I and Class II streams that flow into Class I streams. This was incorporated into the Forest Plan Standards and Guidelines as "No commercial harvest within 100 feet of Class I streams and Class II streams that flow into Class I streams."

Windfirm Buffers

These are buffers added alongside stream buffers to improve windfirmness to the stream buffer. For Floodplain (FP), High Gradient Contained (HC), Large Contained (LC), Moderate Gradient Contained (MC), Moderate Gradient/Mixed Control (MM), and Palustrine (PA) areas,

Appendix 2

manage an appropriate distance beyond the no-harvest zone to provide for a reasonable assurance of windfirmness of the Riparian Management Area (pay special attention to the area within one site-potential tree height of the Riparian Management Area). Site-potential tree heights vary according to the channel type as follows:

- Floodplain - 130 feet
- High Gradient Contained - 120 feet
- Large Contained - 100 feet
- Moderate Gradient Contained - 100 feet
- Moderate Gradient/Mixed Control - 120 feet
- Palustrian - 85 feet or less

Lands

Encumbered Lands

These are lands that have a claim, lien, charge or liability attached to and binding real property. This includes Native Selection land which is selected but as yet unconveyed by the USDI Bureau of Land Management for lands withdrawn in fulfillment of Native entitlements established under ANSCA.

General Mitigation Measures

These general measures apply to all units and roads in the Gravina Island project. The source(s) of each general measure are listed after the measure in terms of individual Forest-wide Standards and Guidelines (see Chapter 4 of the Forest Plan) or BMPs (see Appendix C of the Forest Plan and Chapter 10 of FSH 2509.22, The Soil and Water Conservation Handbook).

Air Quality Protection

Design projects to control air pollution impacts and to ensure that the predicted emissions from all pollution sources do not exceed ambient air quality standards, as specified under the Alaska Administration Code, Title 18, Chapter 50. (AIR 112)

Soil/Water Protection during Timber Sale Planning

Incorporate soil and water resource considerations into timber sale planning. Include site-specific considerations, site preparation, designating water quality protection needs on sale area maps, locating and designing landings for good drainage and dispersion of water, incorporating erosion control and timing responsibilities into the Operating Schedule, scheduling and enforcement of erosion control during and at completion of the timber sale, including non-recurring "C" provisions to protect soil and water resources in timber sale contracts, and seeking an environmental modification of the contract if new circumstances or conditions indicate that soil, water, or watershed damage may occur. (BMPs 13.1, 13.2, 13.3, 13.4, 13.9, 13.10, 13.11, 13.12, 13.14, 13.17, and 13.18)

Soil/Water Protection during Road Development

Implement measures to reduce surface erosion and drainage interruption related to transportation. This includes water barring and cross-draining roads using ditches and culverts to prevent water running long distances over roads, closure, and seeding and fertilizing cut-and-fill slopes. (BMPs 14.1, 14.2, 14.3, 14.5, 14.7, 14.8, 14.9, 14.10, 14.11, 14.12, and 14.19)

Soil/Water Protection during Road Management

Conduct road maintenance and snow removal operations to minimize disruption of road surfaces, embankments, ditches, and drainage facilities, and use road closures or other measures to keep road surface and road site erosion at low or background levels. (TRAN23-I, BMPs 14.20 and 14.23)

Management of Road Use to Reduce Erosion and Sedimentation

Control access and manage road use to reduce the risk of erosion and sedimentation from road surface disturbance especially during the higher risk periods associated with high runoff and spring thaw conditions. (BMP 14.22)

Temporary Road Obliteration

Obliterate temporary roads after use, remove or bypass drainage structures and install waterbars in appropriate places. (RIP2-II and BMPs 12.17 and 14.24)

Soil/Water Protection during Development of Rock Sources, LTFs, & Other Facilities

Implement measures to reduce surface erosion and other impacts on soils and water from gravel sources and quarries, LTFs, sortyards, and other facilities. (BMPs 14.18, 14.19, 14.25, 14.26, and 14.27)

LTF Siting

Site LTFs in locations which will best avoid or minimize potential impacts on water quality, aquatic habitat, wildlife, and other resources. (TRAN214-V, WILD112, and BMP 14.4)

Camp and Facility Siting

Sitc camps and other facilities sufficiently far from important seasonal bear concentrations, raptor nest sites, and other important wildlife habitats, to avoid or minimize wildlife-human conflicts. (WILD112)

Sanitation at Facilities

Comply with all regulations for the disposal of sewage at camps, LTFs, and other facilities; require incinerators and/or other bear-proof garbage disposal methods at work camps. (FAC1, FAC22, WILD112-VI, BMPs 12.10, 12.15, and 12.16)

Accidental Spills

Implement measures and plans to prevent the contamination of soil and water from accidental spills of petroleum products and hazardous substances. (BMPs 12.8 and 12.9)

Heritage Site Discovery

Suspend work if a heritage site is discovered during project implementation. Authorize resumption of work only after consultation with the State Historic Preservation Office is complete.

Karst/Cave Inventory

Inventory karst landscapes and cave resources prior to initiation of project planning (including the use of dye tracing). (KARST-III)

Maximum Size of Created Openings

Limit created openings to a maximum size of 100 acres. (TIM114-IV)

Maintain Advance Regeneration

Maintain advance regeneration within the unit to meet reforestation needs and stand objectives. (TIM111-2-I)

Maintain Minor Tree Species

Selectively maintain minor species (e.g., yellow-cedar, western redcedar, Pacific yew), where appropriate for the site, as viable components of future stand, for vegetative diversity, and for seed trees. (TIM111-2-I, TIM114-II)

Windthrow Hazards Along the Boundaries of Protected LUDs

Take measures that protect LUDs which prohibit timber harvest activities from harvested related windthrow. (TIM114-XII)

Certification of Reforestation

Certify that every unit that receives a final harvest meets or surpasses the stocking guidelines and certification standards (FSH 2409.17) within 5 years. (TIM24)

Wetland Protection

Minimize the loss of all wetlands, but particularly the higher-value wetlands (especially fens), and minimize the adverse impacts of land management activities on wetlands; follow Executive Order 11990 and the BMPs. (WET-I, WET-III, BMP 12.5)

Beach and Estuary Fringe Protection

Avoid harvest within the beach and estuary fringe; avoid road construction within this zone, except where no feasible alternative exists. (BEACH 2)

Non-Development LUD Protection

Avoid timber harvest impacts and minimize road construction within non-development LUDs such as Old-growth Habitat, Remote and Semi-remote Recreation, and Wild and Scenic River corridors.

Connectivity Between Old Growth Reserves

Provide corridors of old-growth forest between and among medium and large old-growth reserves. Where sufficient connectivity does not exist, or where the minimum Forest Plan

criteria are not met, relocate or redesign mapped, small old-growth reserves. (WILD112-XVIII)

Marine Mammal Protection

Ensure that Forest Service permitted or approved activities are conducted in a manner consistent with the Marine Mammal Protection Act, the Endangered Species Act, and National Marine Fisheries Service regulations for approaching whales, dolphins, porpoises, seals, and sea lions. Site camps, LTFs, and other facilities are to be located at least 1 mile away from known Steller sea lion haulouts. (TE&S-I)

Site-specific Mitigation Measures Incorporated into Unit and Road Design

The specific mitigation measures that are applied to selected units and/or roads in a project are identified in this section. The source(s) of each general measure are listed after the measure in terms of individual Forest-wide Standards and Guidelines (see Chapter 4 of the Forest Plan) or BMPs (see Appendix C of the Forest Plan and Chapter 10 of FSH 2509.22, The Soil and Water Conservation Handbook). These measures are listed on each unit or road card as necessary.

Minerals and Geology

M1 - Protection of Mineral Development Improvements: Protect known mineral development improvements, such as mine claim markers, by specifications in timber sale and road construction contracts. (MG12 - II)

K1 - Avoid Effects on Karst/Cave Features: Avoid road construction or modify harvest unit design to avoid impacts on karst or cave features. (KARST - III4)

Fish, Water, and Soils

F1 - Riparian Buffers: Establish no-harvest and selective cut buffers along streams and around lakes to protect riparian areas as defined by the Riparian Standards and Guidelines. Protect buffers from adjacent harvest activities (e.g., directional felling, split yarding, suspension requirements). (RIP2, BMP 12.6)

F2 - Directional Felling Along Buffers: Trees identified for harvest will be felled to avoid riparian areas designated for "no commercial harvest" and stream courses. (RIP2-II)

F3 - Class III/IV Stream Protection: Split yard and directionally fall trees away from Class III and IV streams without buffers. (RIP2-II)

F4 - Yarding Across Streams: Fully suspend logs where yarding is to be done across streams or the full length of a stream or drainage. (RIP2-II)

F5 - Fish Passage: Maintain fish passage at Class I and II stream road crossings using properly designed stream-crossing structures (consult the Aquatic Habitat Management Handbook, FSH 2609.24). (FISH112-IV)

F6 - Use of Bridges: Install bridges at designated stream crossings to minimize the amount of sediment entering streams and/or to ensure good fish passage. (TRAN 214-II)

F7 - Instream Construction Timing Restrictions: Implement timing restrictions for instream construction activities for the protection of anadromous and resident fish. (RIP2-II and BMPs 14.6, 14.10, 14.14, and 14.17)

F8 - Siting of Road-Stream Crossings: Modify the location of road-stream crossings to correspond with stable stream reaches. (TRAN214-II)

F9 - Routing of Roads near Streams: Modify road routes to avoid locations near fish-bearing streams. (TRAN214-II)

F10 - Routing of Roads through Wetlands and Other Sensitive Areas: Modify location of Forest Development Roads to minimize impact to wetlands, floodplains, estuaries, and tidal meadows. (TRAN214-III)

F11 - Harvesting Timber in/near Wetlands and Floodplains: Modify unit design or logging system to avoid or minimize damage to muskegs, other wetlands, or floodplains. (S&W112-I, BMP 12.4 and 12.5)

F12 - Management of Road Use to Reduce Erosion and Sedimentation: Control access and manage road use to reduce the risk of erosion and sedimentation from road surface disturbance

especially during the higher risk periods associated with high runoff and spring thaw conditions. (BMP 14.22)

F13 - Storm-proofing Roads: Design system roads with oversized culverts, outfall riprap, armored dips adjacent to culverts, substantial ditch blocks, drivable waterbars, and/or other measures to prevent culvert failure or erosion during periods of inactivity. (TRAN22-I)

F14 - Road Storage: Establish self-maintaining drainages across roads, remove bridges and reestablish natural drainage patterns, and establish vegetation cover on the road to prevent erosion during periods of inactivity. (TRAN22-I)

F15 - Avoid Harvesting Very High Hazard Soils: Modify unit design to avoid very high mass movement areas, including slopes > 72%. (S&W112-I, BMP 13.5)

F16 - Avoid Road Development on Very High Hazard Soils: Avoid road construction along unstable slopes, including slopes > 67%. (S&W112-I and BMP 13.5)

F17 - Soil/Water Protection along Roads on Very High Hazard Soils: Where avoidance of road construction along unstable slopes is not possible, take special precautions with fill to prevent soil erosion, stream sedimentation, and mass wasting or require full bench construction and end hauling of excavated material. (S&W112-I, TRAN 214-II, and BMP 14.7)

F18 - Suspension Requirements to Protect Soils: Use partial- to full-suspension logging systems in areas with high mass movement potential. (S&W112-I, BMP 13.9)

F19 - Steep, Class IV, V-notch Streams: Establish no-harvest buffers along steep, Class IV, v-notch streams with high erosion potential. (S&W112-I, BMP 12.6 and 13.16)

Timber

T2 - Maintain Minor Tree Species: Selectively maintain minor species (e.g., yellow-cedar, western redcedar, Pacific yew), where appropriate for the site, as viable components of future stand, for vegetative diversity, and for seed trees. (TIM111-2-I, TIM114-II)

Wildlife and Threatened/ Endangered/ Sensitive Species

W1 - Clearcutting with Reserves: Provide for greater habitat diversity on a stand level over time by using clearcutting with reserve trees (even-aged system) as a harvest prescription (see Appendix G to Forest Plan FEIS). (WILD112-III)

W2 - Seed Tree Method: Provide for greater habitat diversity on a stand level over time by using the seed tree method (even-aged system) as a harvest prescription (see Appendix G to Forest Plan FEIS). (WILD112-III)

W3 - Shelterwood Method: Provide for greater habitat diversity on a stand level over time by using the shelterwood method (even-aged or two-aged systems) as a harvest prescription (see Appendix G to Forest Plan FEIS). (WILD112-III)

W4 - Reserves Under a Two-aged Harvest System: Provide for greater habitat diversity on a stand level over time by leaving reserve trees (two-aged system) as a harvest prescription (see Appendix G to Forest Plan FEIS). (WILD112-III)

W5 - Patch or Strip Clearcutting: Provide for greater habitat diversity on a stand level over time by using patch or strip clearcutting (two-aged or uneven-aged systems) as a harvest prescription (see Appendix G to Forest Plan FEIS). (WILD112-III)

W6 - Selection Harvest: Provide for greater habitat diversity on a stand level over time by using the selection method (uneven-aged system) as a harvest prescription (see Appendix G to Forest Plan FEIS). (WILD112-III)

W7 - Leaving Nonmerchantable Trees and Snags: Provide for greater habitat diversity on a stand level over time by leaving most nonmerchantable trees and snags after harvest. (WILD112-III)

Appendix 2

W8 - Restrictions on Helicopter Yarding: Modify helicopter yarding routes and/or timing of helicopter activity to avoid important wildlife habitats (c.g., mountain goat summer/kidding habitat or active eagle nest sites). (WILD112-XII)

W9 - Road Closures: Close roads to motorized use to protect brown bears, wolves, marten and other large predators and furbearers from overharvest. (WILD112)

W10 - Protection of Goshawk Nests: Avoid harvest and road construction near confirmed and probable northern goshawk nest sites according to Forest-wide Standard & Guideline TE&S-II, J, 1. (TE&S-II)

W11 - Timing of Activities and Disturbance at Goshawk Nests: Avoid continuous disturbance within 600 feet of an active goshawk nest from March 15 to August 15. (TE&S-II)

W13 - Protection of Bald Eagle Nest Trees/Other Sites and Timing of Activities: Avoid all activity, modify unit or road design, and/or limit timing of activities, near bald eagle nest trees, perch trees, and winter roost sites in accordance with the Interagency Agreement established with the U.S. Fish and Wildlife Service. (WILD112-V)

W20 - Protection of Trumpeter Swan Nesting, Brooding, and Wintering Areas and Timing of Activities: Avoid all activity, modify unit or road design, and/or limit timing of activities, within 0.5 mile of wetlands used by nesting, brood-rearing, and wintering trumpeter swans to avoid impacts. (TE&S-II)

W24 - Protection of Wolf Dens: Maintain a 1,200-foot forested buffer, where available, around known active wolf dens. (WILD112-XI)

W25 - Timing of Activities and Disturbance of Denning Wolves: Avoid road construction within 600 feet of known active wolf dens. (WILD112-XI)

W28 - Management of Marten Habitat: Maintain important features of forest stand structure in harvest units in order to manage high-value marten habitat according to Forest-wide Standard & Guideline WILD112-XVI, A, 2. (This applies to VCU in higher risk biogeographic provinces). (WILD112-XVI)

W29 - Rare or Endemic Terrestrial Mammals: Modify units or roads to avoid habitats supporting rare or endemic terrestrial mammals that may represent unique populations with restricted ranges. (WILD112-XVII)

W31 - Protection of Sensitive Plant Species: Modify unit boundaries or road routing to avoid habitats supporting populations of sensitive plant species. (TE&S-II)

W32 - Protection of Candidate Species or Species of Concern: Modify units, roads, or other facilities to avoid or reduce impacts on U.S. Fish and Wildlife Service-designated Candidate species and Species of Concern. (TE&S-III)

W33 - Corridors Between Old-Growth Habitat Reserves: Avoid harvest in order to maintain corridors of old-growth forest between old-growth habitat reserves and other natural setting LUDs at the landscape scale. (WILD112-XVIII)

Heritage Resources

H1 - Avoid Direct Effects on Heritage Resource Sites: Avoid road construction or harvest unit placement in areas with heritage resource value. (HER-IV)

H2 - Avoid Indirect Effects on Heritage Resource Sites: Provide for protection from indirect effects on heritage resource sites near proposed harvest units and roads. (HER-V4)

H3 - Mitigation through Data Recovery: Mitigate valuable heritage resource sites through data recovery. (HER-IV)

Recreation and Tourism

R1- Access Restrictions for Recreation: Close or restrict access on roads to maintain remoteness of areas after harvest. (REC112-II)

Visuals

R2 - Access Improvement for Recreation: Open roads after project implementation to take advantage of opportunities created by new access. (REC112-II)

V1 - Clearcutting with Reserves: Reduce visual contrast with adjacent areas by using clearcutting with reserve trees (even-aged system) as a harvest prescription (see Appendix G to Forest Plan FEIS). (VIS11-III)

V2 - Seed Tree Method: Reduce visual contrast with adjacent areas by using the seed tree method (even-aged system) as a harvest prescription (see Appendix G to Forest Plan FEIS). (VIS11-III)

V3 - Shelterwood Method: Reduce visual contrast with adjacent areas by using the shelterwood method (even-aged or two-aged systems) as a harvest prescription (see Appendix G to Forest Plan FEIS). (VIS11-III)

V4 - Reserves Under a Two-aged Harvest System: Reduce visual contrast with adjacent areas by leaving reserve trees under a two-aged system as a harvest prescription (see Appendix G to Forest Plan FEIS). (VIS11-III)

V5 - Patch/Strip Clearcutting: Reduce visual contrast with adjacent areas by using patch or strip clearcutting (two-aged or uneven-aged systems) as a harvest prescription (see Appendix G to Forest Plan FEIS). (VIS11-III)

V6 - Selection Harvest: Reduce visual contrast with adjacent areas by using the selection method (uneven-aged system) as a harvest prescription (see Appendix G to Forest Plan FEIS). (VIS11-III)

V7 - Leaving Nonmerchantable Trees: Reduce visual contrast with adjacent areas by leaving most nonmerchantable trees after harvest. (VIS11-III)

V8 - Modification of Unit Boundaries: Modify unit boundaries to assure that the harvest unit meets the proposed VQO in partial retention and retention areas. (VIS11-II)

V9 - Treatment of Rock Sources: Locate rock sources off the road along Visual Priority Routes, so that rock source development is not apparent from the road and/or use a landscape architect in the planning/design of rock pits. (VIS11-II)

V10 - Roadside Cleanup: Provide for roadside cleanup of ground-disturbing activities in partial retention and retention areas. (VIS11-II)

V11 - LTF Design: Use low profile LTF design to minimize visibility from Visual Priority Travel Routes and Use Areas. (VIS11-II)

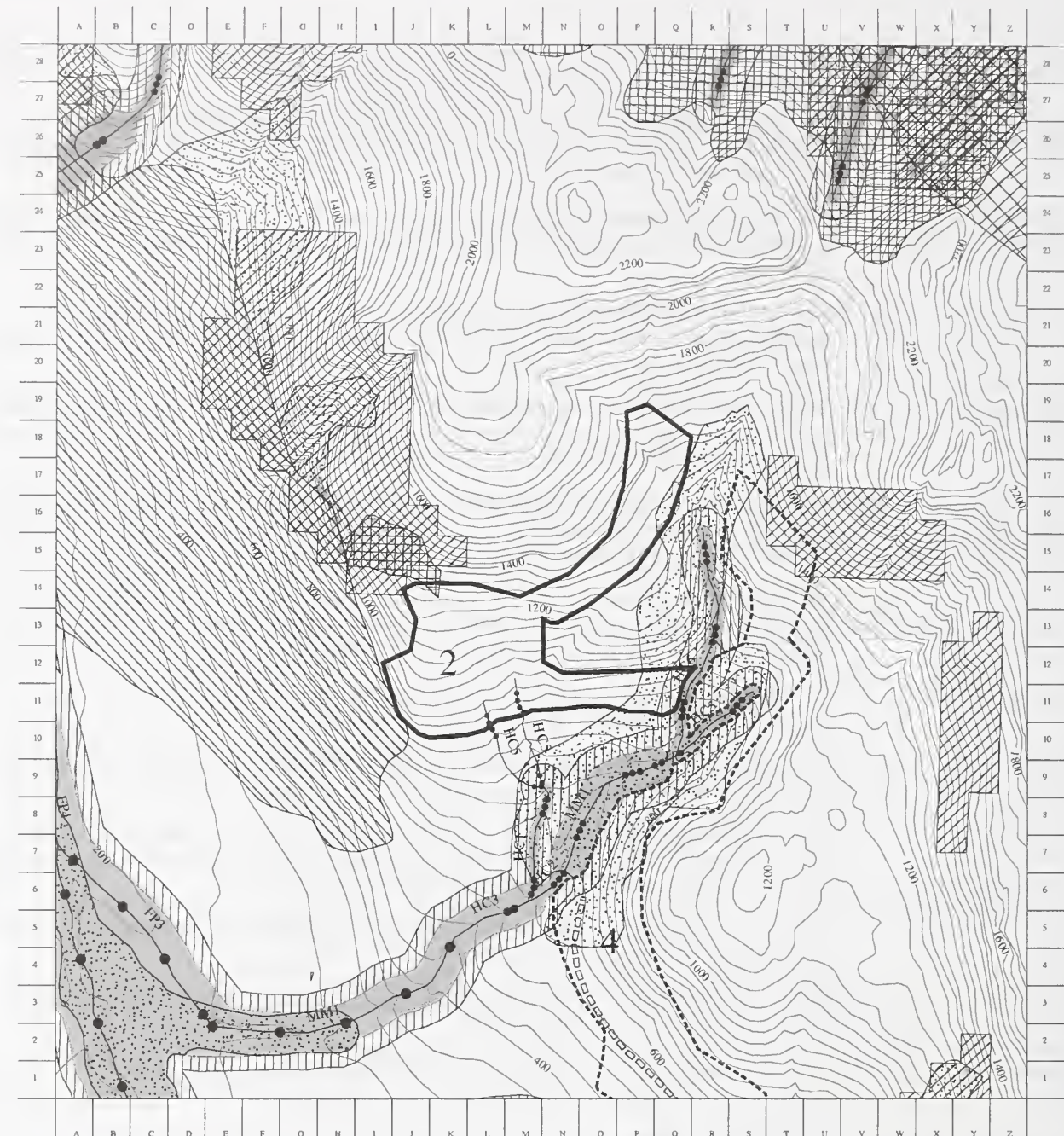
V12 - Temporary LTFs: Use temporary LTF and incorporate rehabilitation measures into project analysis and the contract package to reduce long-term visual effects in partial retention areas. (VIS11-II)

Subsistence

S1 - Access Restrictions for Subsistence: Close or restrict access on roads to maintain remoteness of areas after harvest to address subsistence issues. (SUB-I)

S2 - Access Improvement for Subsistence: Open roads after project implementation to address subsistence issues. (SUB-I)

Gravina Record of Decision Unit:2 (38 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_2.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl_1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	2	Planned Unit Acres:	38	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	298-110
		Logging Prescriptions:	Helicopter	Town/Range/Sect:	75S90E30
				Total Estimated Harvest Volume (CCF):	2,551

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC6 Southeast: Sideslope Standard and Guideline buffer required

Class IV HC5 South: Requires directional felling, partial, or full suspension

Class IV HC5 South: Requires directional felling, splitline, partial, or full suspension

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit is a wind-developed, even-aged, western hemlock-dominated stand. The understory is sparse with pockets of western hemlock regeneration. Unit aspect is south and southeast. Windthrow potential is high. Mistletoe is minor to moderate throughout unit.

Desired Future Condition: Stand will be predominantly even-aged with windfirm reserve clumps and scattered trees where possible. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped, in the eastern portions of the unit that have high value marten habitat. Elsewhere, leave areas of low-productivity forest, stream buffers, etc. to reduce total opening size, as this unit also borders Unit 4. Where possible, retain trees throughout the unit, particularly submerchantable stems, snags, and near snags of large diameter. The helicopter yarding system should enable protection of the advanced regeneration in the understory.

SOILS:

Slopes Greater than 72%: No slopes greater than 72% will be harvested.

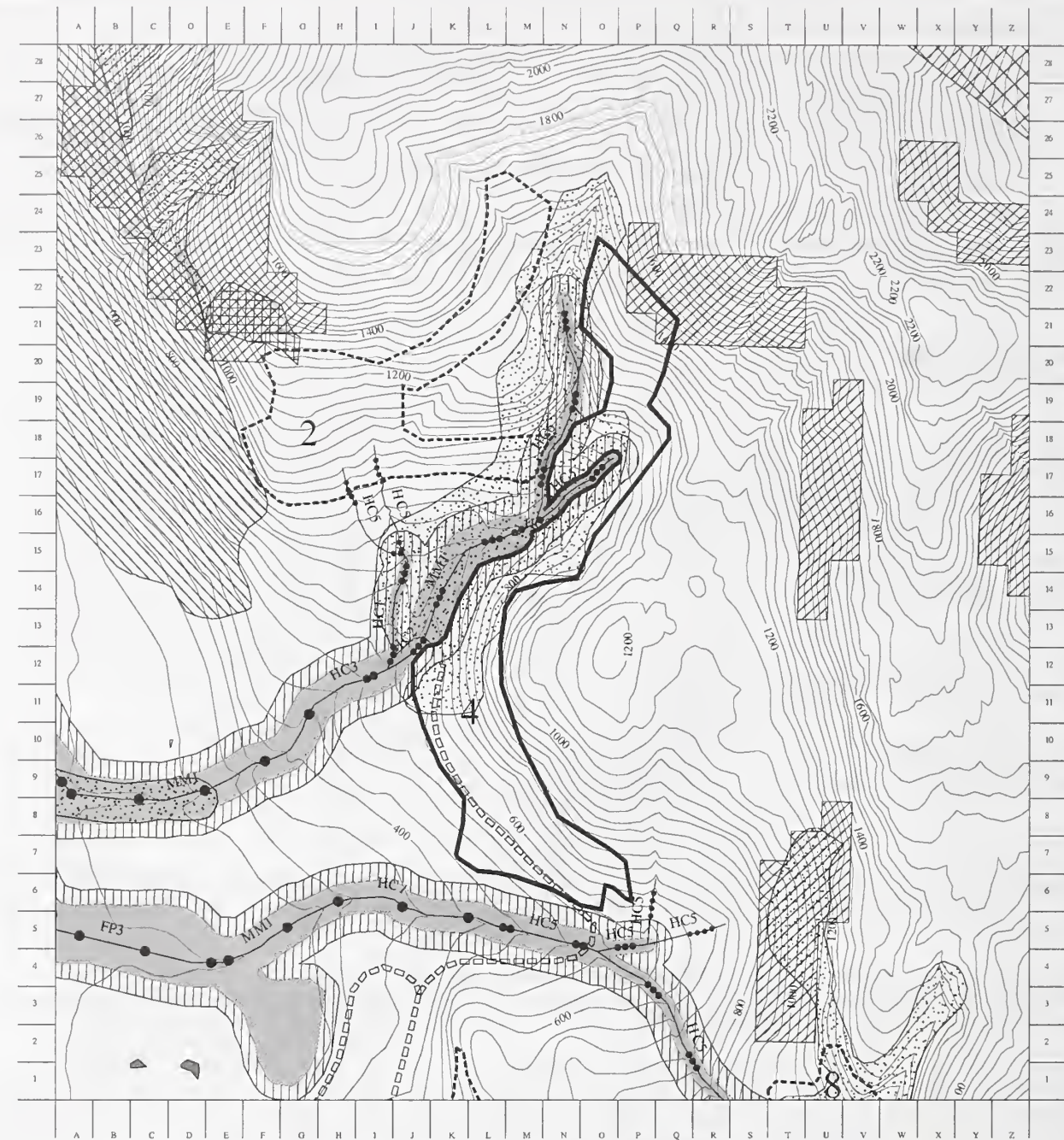
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:4 (52 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /s/files/office/gis/gravina/alan/postscript/grodpl_4.eps
AML located: /s/files/unit/km/timber/personal/al/aml/grodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	4	Planned Unit Acres:	52	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	298-110
		Logging Prescriptions:	Helicopter/ Cable	Town/Range/Sect:	75S90E30
				Total Estimated Harvest Volume (CCF):	3,407

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

Roads will be located in the unit to avoid wetlands where possible (BMP 14.2). Use overlay-road construction when crossing wetlands, and minimize side ditching, where practical, to minimize the effects upon ground-water flows (BMPs 14.3, 14.12). Avoid road construction along unstable slopes, including slopes > 67% (BMP 13.5).

FISH/WATERSHED:

Class III HC6 Northwest: Sideslope Standard and Guideline buffer required
 Class III HC5 Northwest: Sideslope Standard and Guideline buffer required
~~Class III HC2/MM1 Centralwest: Sideslope Standard and Guideline buffer required~~
 Class II (TTRA) HC3 West: Standard and Guideline 100-foot or greater buffer required
 Class I/II – HC1/S South: Standard and Guideline 100-foot or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Portions of this unit along with 11 and 13 visible in background from Vallenar Bay. Major impact is from the prominence of the backline of all these units. ~~Soften impact of backline by leaving clumps of reserve trees along backline. Objective is to meet~~ Forest Plan VQO of Maximum Modification.

SILVICULTURE:

Vegetation: Western hemlock is the dominant species with scattered spruce throughout and pockets of mixed cedar in the central portion. Windthrow hazard is variable and ranges from low in the lower portions of the unit to high along the upper reaches. One small area of yellow cedar decline, minor in severity, was noted.

Desired Future Condition: Stand will be predominantly even-aged with windfirm reserve clumps and scattered trees where possible. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped, in the central portions of the unit that have high value marten habitat. Reserves will also be located in the Class III stream buffer that is located within the unit and in areas of oversteepened slopes and low-productivity forest, to reduce total opening size, as this unit also borders Unit 2. Feather edges and/or widen stream buffer in areas to ensure windfirmness. If possible, retain trees throughout the unit, especially along the backline of the unit that is visible from Vallenar Bay. The helicopter yarding system should enable protection of the other cohorts in the understory.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that the steep northern part of the unit will be reserved from harvest to maintain slope stability, and the eastern unit boundary will be placed to exclude slopes steeper than 80% (BMP 13.2, 13.5). About 3 acres of slopes greater than 72% will be harvested.

TIMBER:

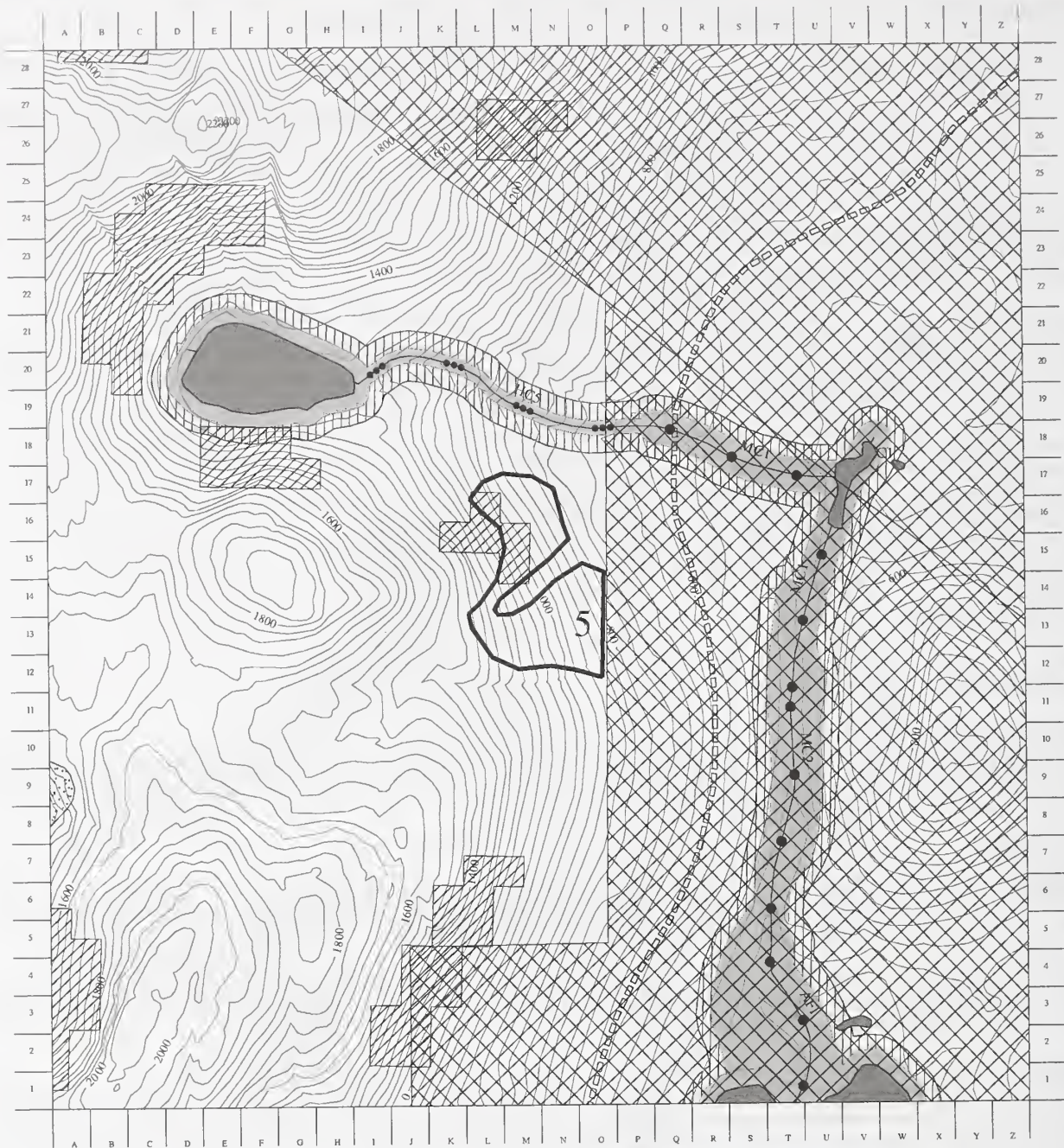
This unit is designed for helicopter and short-span cable yarding.

Suspension Needs: Locate back-line in east and northeast portions of the unit at the base of the cliffs (BMP 13.5).

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:5 (17 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Eneumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grodpl_5.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grodpl_5.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	5	Planned Unit Acres:	17	Silvicultural Prescription:	STS
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	298-6
		Logging Prescriptions:	Helicopter	Town/Range/Sect:	75S90E28
				Total Estimated Harvest Volume (CCF):	272

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

Maintain integrity of property line running north and south.

RECREATION/SCENERY:

Unit is visible from many areas of Ketchikan (downtown, west end, Carlanna, Whitecliff areas). Maintain as much forested texture as possible. Limit harvest to that which will create only small gaps in canopy (or slightly enlarged shadows from what is present now). Goal is to meet Retention VQO. 75% retention

SILVICULTURE:

Vegetation: Unit is a two-cohort, western hemlock-western red cedar dominated stand that has small components of Alaska yellow cedar and Sitka spruce. Many of the WRC stems are highly defected. Mistletoe is present in moderately severe infections scattered throughout the stand. Very minor yellow cedar decline is present. Canopy cover is variable, allowing patches of advanced regeneration to occupy the openings. Windthrow potential is estimated to be low.

Desired Future Condition: Stand will have multiple canopy layers. Overall stand will be uneven-aged. 75% of the stand is being retained to meet visual quality objectives, maintain slope stability, and provide structure. Natural regeneration through release of established stems is expected to be adequate.

Treatment: Apply a single-tree selection prescription, retaining at least 75% of stand structure through individual tree marking, to mitigate the visual and soils concerns. Approximately 1 acre in the west-central portion of the unit will be reserved from harvest to further address soils concerns. A mix of tree species will be left.

SOILS:

Slopes Greater Than 72%: The results of an on-site soil stability investigation determined that single-tree selection harvest will promote slope stability in this unit. No trees will be selected in the central western edge of the unit above the existing landslide (BMP 13.2, 13.5). Approximately 2 acres of slopes greater than 72% will be harvested.

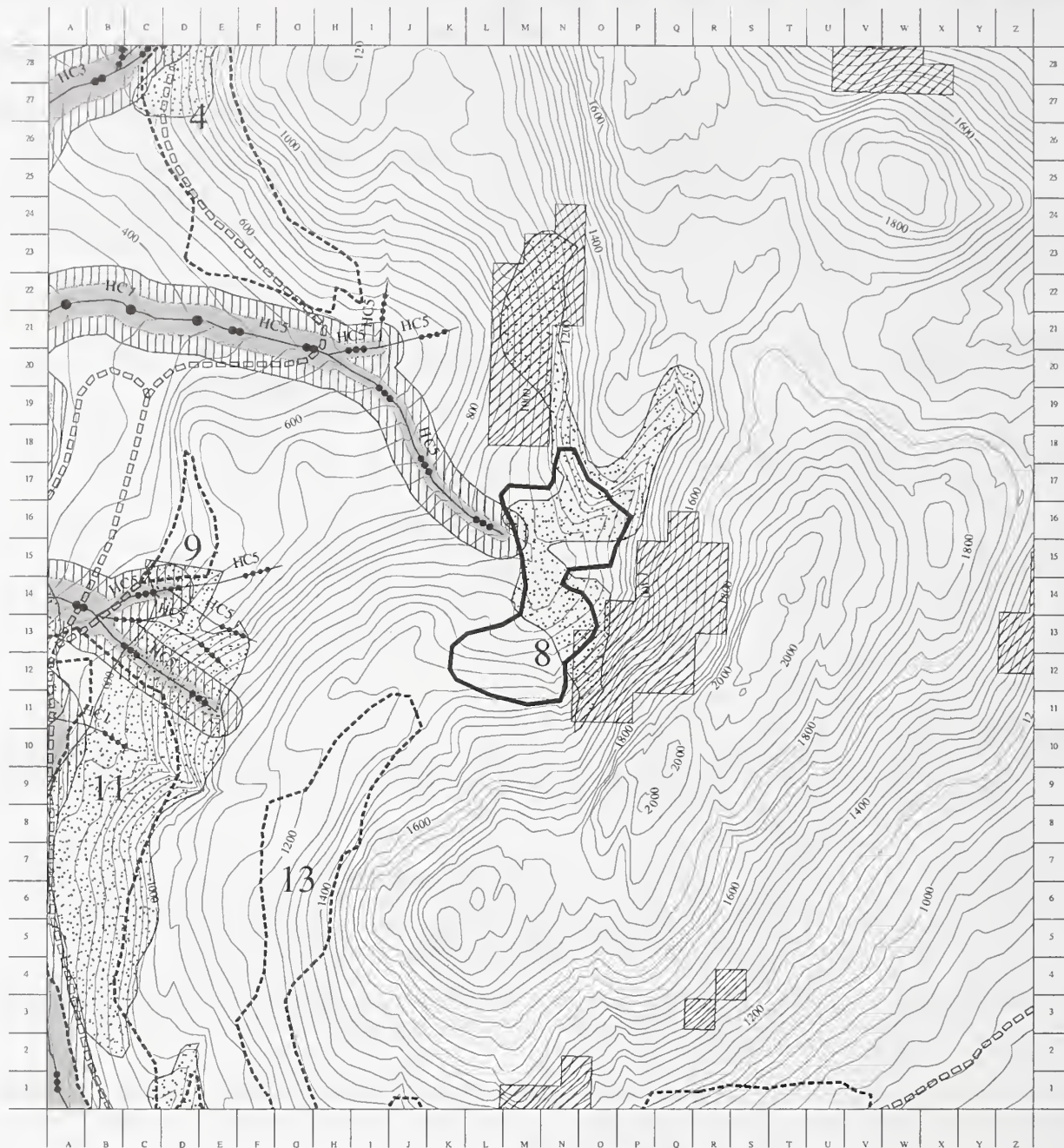
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:8 (21 Acres)



- | | | | | | |
|--|-------------------|--|---------------------|--|----------------------|
| | Class I Stream | | Salt Water | | MM-Haz 4 Soils |
| | Class II Stream | | Lakes/Ponds | | Slopes > 72% |
| | Class III Stream | | Riparian Areas | | Windfirm Mgt. Areas |
| | Class IV Stream | | Encumbered NFS | | Hi Value Marten Hab. |
| | ROD Unit Boundary | | NON -NFS | | Previous Harvest |
| | Other ROD Units | | Old Growth Reserves | | |
| | Proposed Roads | | | | |



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grrod1_8.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grrod1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	8	Planned Unit Acres:	21	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	298-108
		Logging Prescriptions:	Helicopter	Town/Range/Sect:	75S90E32
				Total Estimated Harvest Volume (CCF):	1,467

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

Refer to road card.

FISH/WATERSHED:

Class III HC5 Northwest: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit lies in a small bowl at mid elevation. North portion of unit faces southwest and is comprised of a multi-layered western hemlock and spruce stand. The south half of the unit has a northerly aspect and is comprised of hemlock and yellow cedar. Canopy closure is varied and ranges from open (approx. 30%) to a closed canopy that has shaded out the understory. Moderate severities of mistletoe are present in most western hemlock.

Desired Future Condition: Stand will be predominantly even-aged with windfirm reserve clumps and scattered trees where possible. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped in the areas of the unit that have high value marten habitat. Also, leave areas of low-productivity forest and areas of slope greater than 72% for reserve. Where possible, retain trees throughout the unit, particularly snags and near snags of large diameter in the southern portion of the unit. Favor 1-2 spruce per acre as leave trees to encourage re-establishment of spruce following harvest. The helicopter yarding system should enable protection of the other cohorts in the understory. If slopes greater than 72% occur in high-value marten habitat, then reserving of steep slopes can count as reserve for marten habitat. T2

SOILS:

Slopes Greater than 72%: Slopes greater than 72% found in the north and eastern parts of the unit will be reserved from harvest to avoid unstable soils (BMPs 13.2, 13.5).

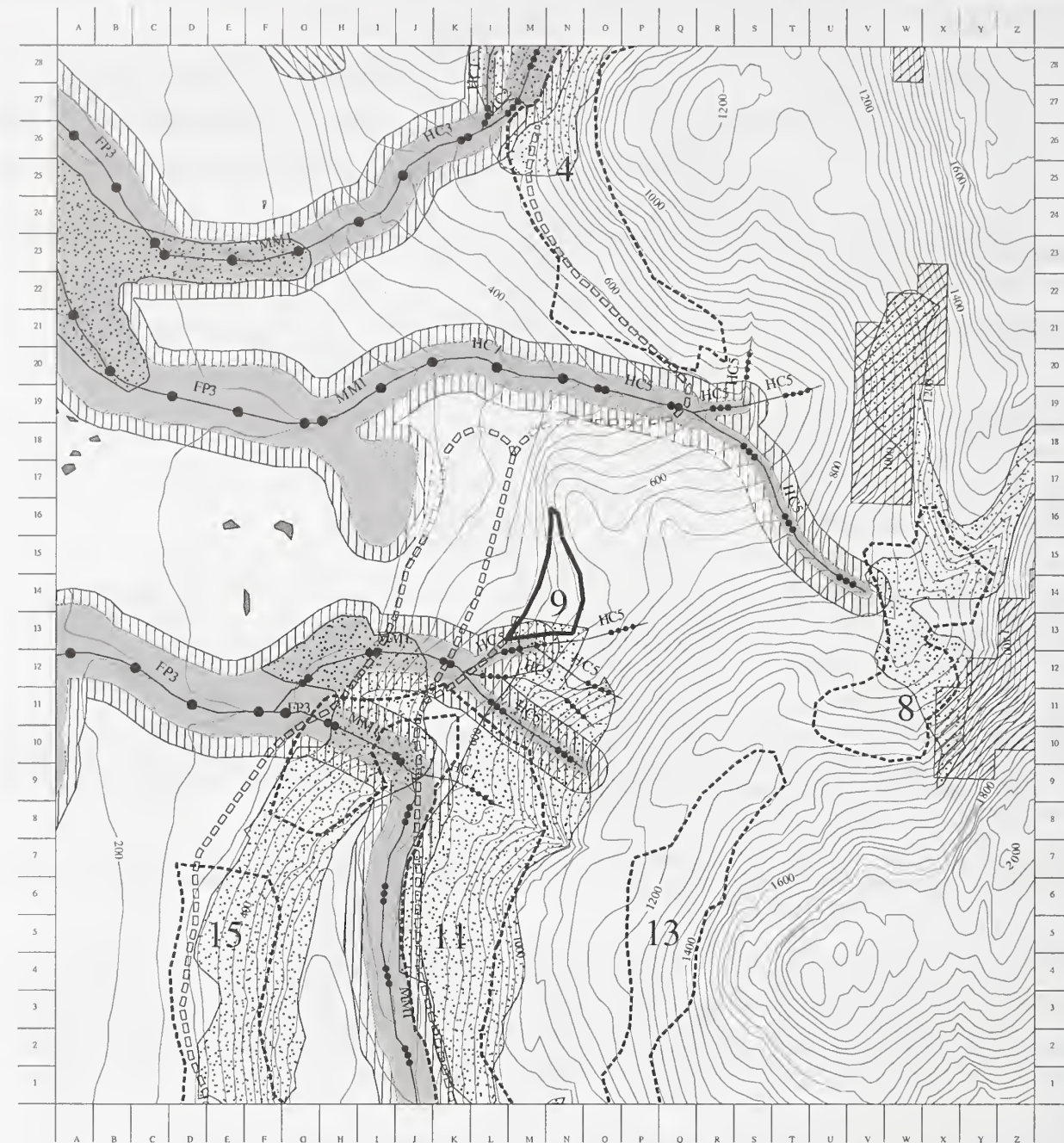
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:9 (4 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves

- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grodpl_9.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grodpl_1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number: 9	Planned Unit Acres: 4	Silvicultural Prescription: CC
LUD: TP	Quad: KTNB6SE	VCU Number: 76101,76301
Primary WAA Number:	101	Photo: 298-108 Town/Range/Sect: 75S90E30
Logging Prescriptions:	Short Span Cable	Total Estimated Harvest Volume (CCF): 301

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC5 South: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit has a west aspect on southern end of a bowl, resulting in high amounts of wind disturbance. Forest type is dominated by western hemlock with large, scattered western red cedar. Structure varies between areas of old growth to small openings, caused by windthrow, filled with seedling and sapling western hemlock. Mistletoe is present throughout in moderate severity.

Desired Future Condition: Stand will be even-aged. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. This prescription will reduce mistletoe, maximize economic return, regenerate a healthy stand with less defect, and minimize risk of windthrow. Where possible, retain trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

No resource concerns were identified.

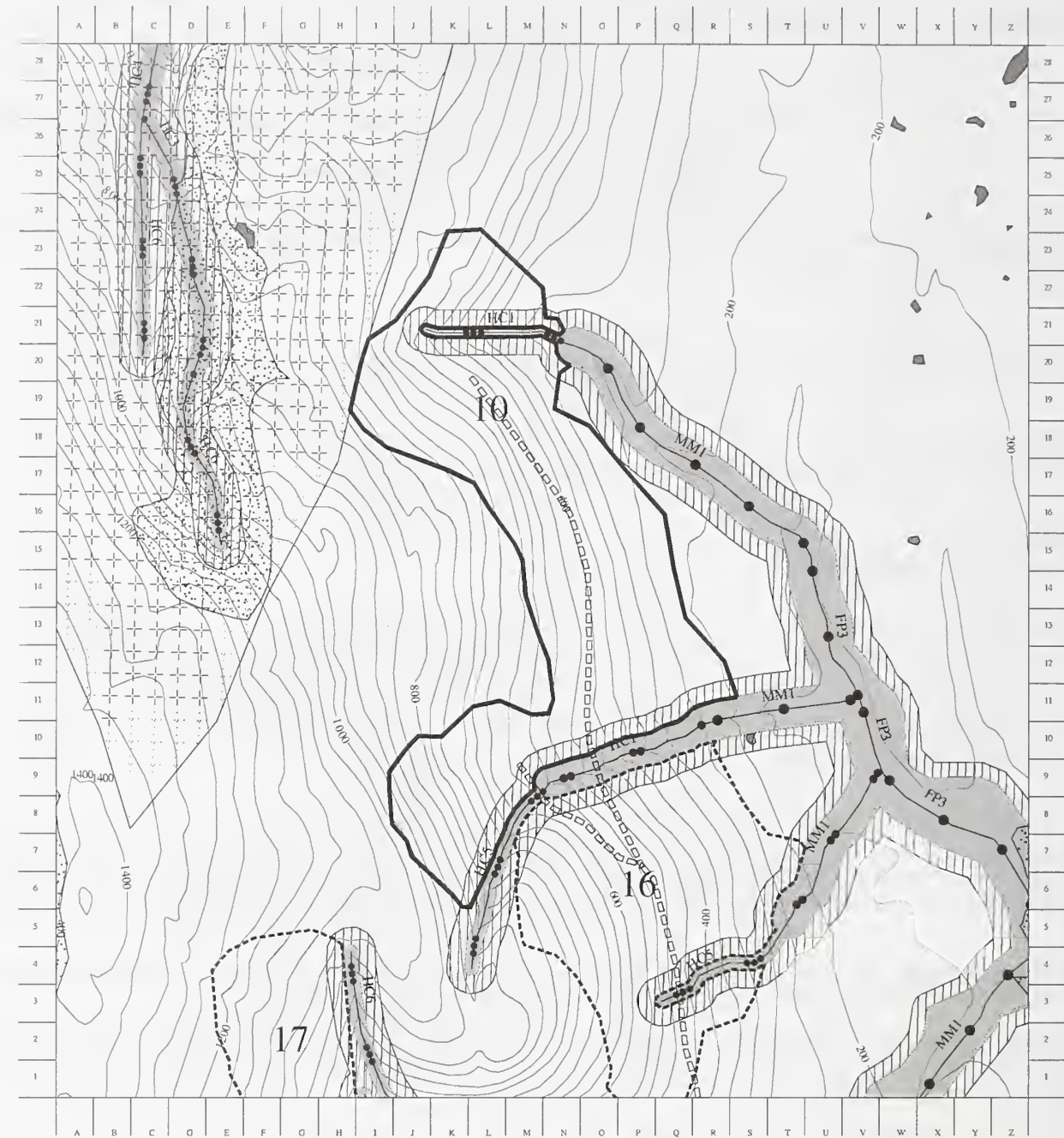
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:10 (103 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_10.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number: 10	Planned Unit Acres: 103	Silvicultural Prescription: EACCR	
LUD: TP		Quad: KTNB6SE	VCU Number: 76301
	Primary WAA Number: 101	Photo: 198-68	Town/Range/Sect: 75S89E36
	Logging Prescriptions: short-span cable	Total Estimated Harvest Volume (CCF):	4,815

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC1 North: Sideslope Standard and Guideline buffer required
 Class II (TTRA) HC1 Southeast: Greater of 100-foot Standard and Guideline buffer required
 Class III HC5 South: Sideslope Standard and Guideline buffer required
 Class I (TTRA) MM1 Northeast: 140-foot Standard and Guideline or greater buffer required
 Class I (TTRA) MM1 East: 140-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Overstory is primarily western hemlock and large, highly defected western red cedar. Scattered areas of mixed conifer plant association were found, especially in central portion of unit. Windthrow hazard is estimated at moderate to high. Understory shows high amounts of deer browse.

Desired Future Condition: Stand will be predominantly even-aged with windfirm reserve clumps and scattered trees where possible. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Locate reserve areas throughout to break up unit, reduce opening size, and maximize old growth along road. Reserve areas may be clumped to obtain windfirmness. Where possible, retain trees throughout unit, particularly submerchantable stems, snags, and near snags of large diameter.

SOILS:

Slopes Greater than 72%: No slopes greater than 72% will be harvested.

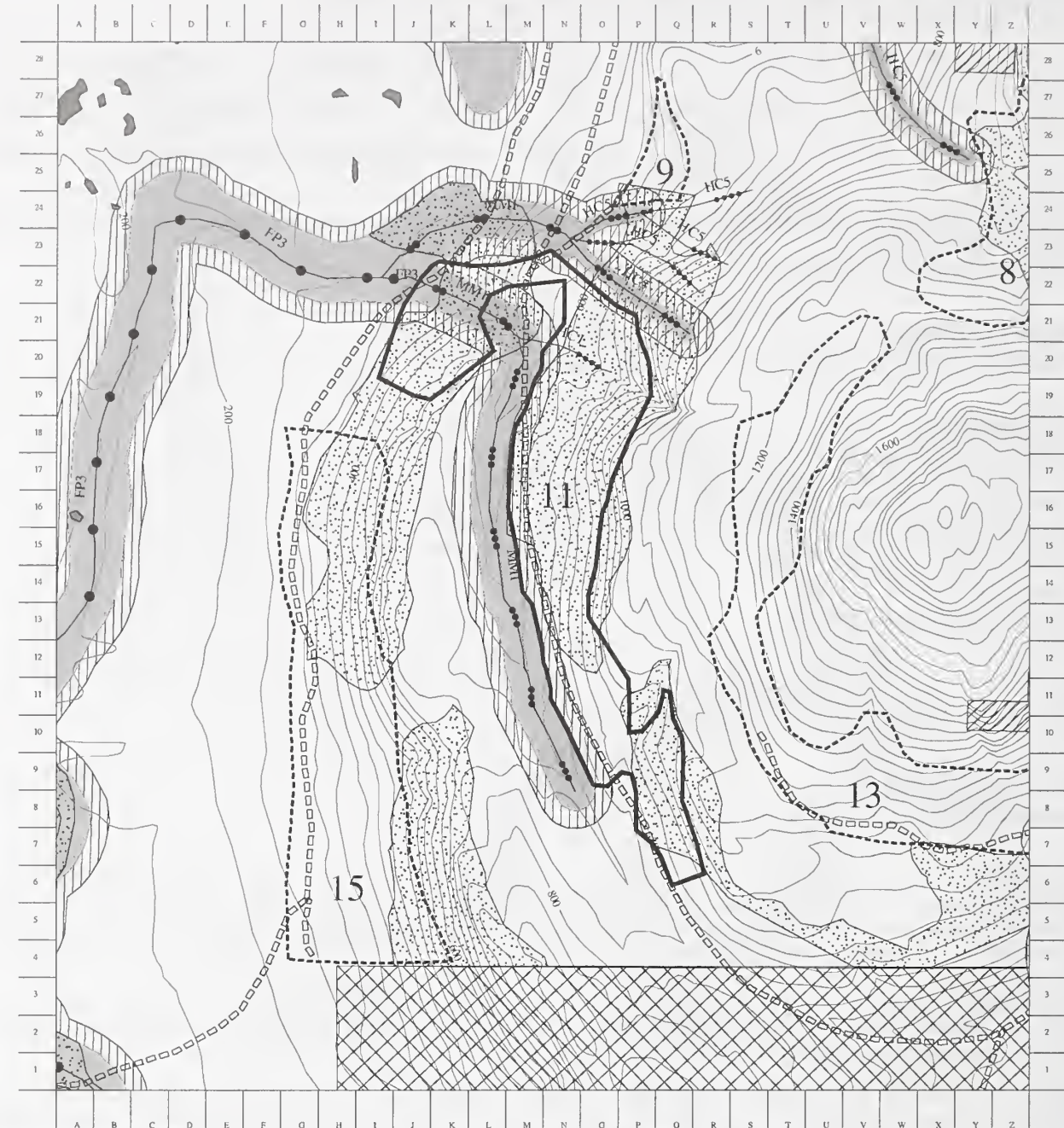
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:11 (62 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grrodpl_11.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	11	Planned Unit Acres:	62	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	298-108
		Logging Prescriptions:	short-span cable	Town/Range/Sect:	75S90E31
				Total Estimated Harvest Volume (CCF):	4,302

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

Landings will be constructed off of 8100000-3 mainline road, where practical. May require additional temp spurs from mainline road to access landings, locations to be determined at final layout.

FISH/WATERSHED:

Class III MM1 West: Sideslope Standard and Guideline buffer required
 Class I (TTRA) FP3 Northwest: Greater of 130-foot Standard and Guideline buffer required
 Class IV HC1 North central: Requires directional felling, partial, or full suspension
 Class III HC5 North: Sideslope Standard and Guideline buffer required
 Class II (TTRA) MM1North: 120-foot Standard and Guideline or greater buffer required
 Class II (TTRA) MM1Northwest: 120-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Portions of this unit along with 4 and 13 visible in background from Vallenar Bay. Major impact is from the prominence of the backline of all these units. Softer impact of backline by leaving clumps of reserve trees along backline. Objective is to meet Forest Plan VQO of maximum modification.

SILVICULTURE:

Vegetation: The northern part of the unit contains areas of heavy windthrow with both older and recent incidences evident. The overstory is dominated by western hemlock and contains a minor component of Sitka spruce. There are moderate infections of mistletoe scattered throughout the unit. The understory is sparse and consists mainly of blueberry.

Desired Future Condition: Stand will be predominantly even-aged with reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped, throughout the areas of high value marten habitat. Concentrate some of the reserve in central portion of unit to break up unit, reduce opening size and maximize old growth forest along road.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation found several small landslides that run through this unit. Eastern unit boundary was brought downslope 100' in the field with intermittent pink flagging to avoid harvest on steep, unstable slopes (BMPs 13.2, 13.5). About 3 acres of slopes greater than 72% will be harvested.

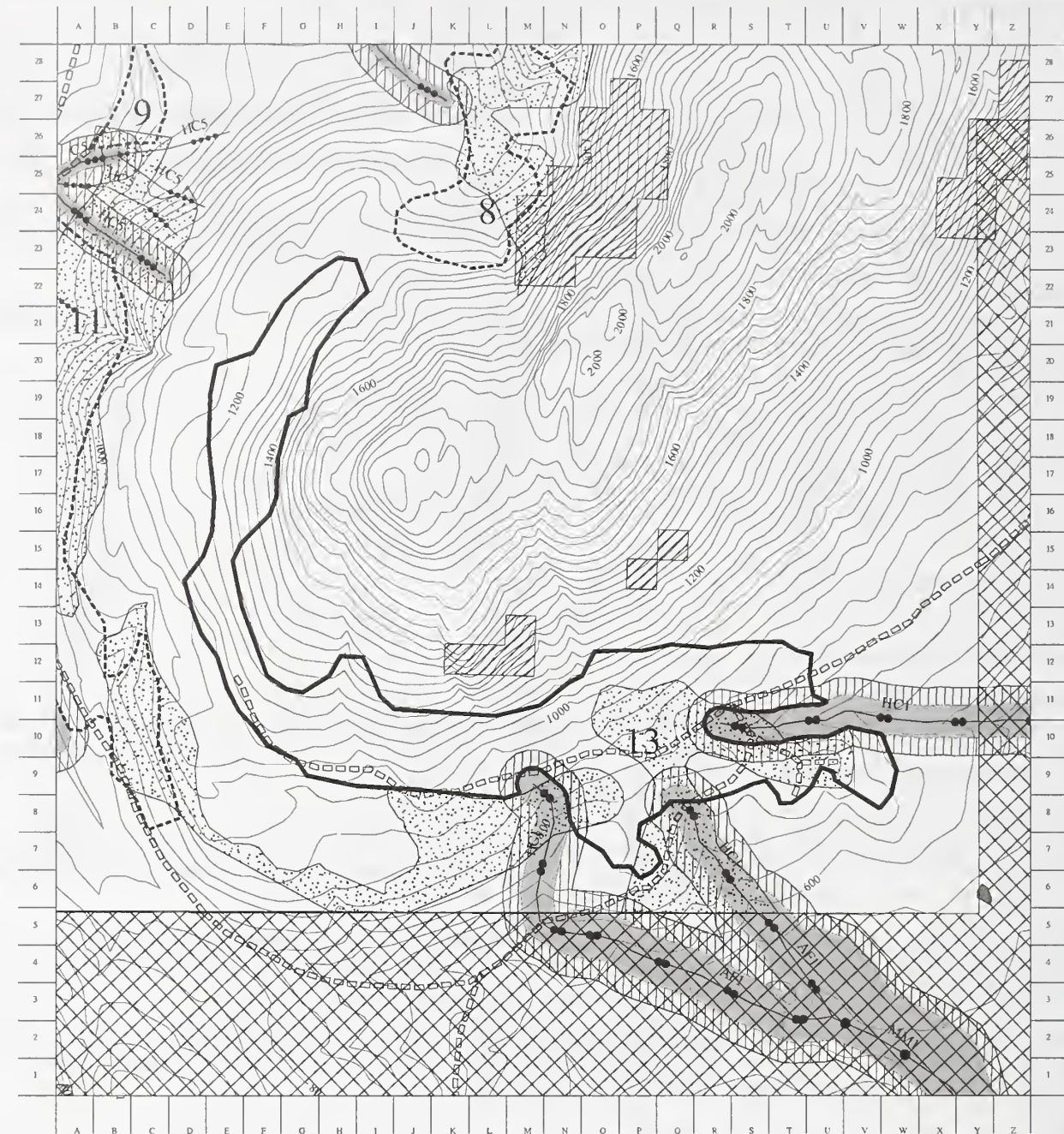
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:13 (97 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodp1_13.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodp1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	13	Planned Unit Acres:	97	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	198-90
		Logging Prescriptions:	short-span cable	Town/Range/Sect:	75S90E32
				Total Estimated Harvest Volume (CCF):	6,486

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II (TTRA) HC1 East: 100-foot Standard and Guideline or greater buffer required

Class II (TTRA) HC1 Southeast: 100-foot Standard and Guideline or greater buffer required

Class II (TTRA) HC1 South: 100-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Portions of this unit along with 4 and 11 visible in background from Vallenar Bay. Major impact is from the prominence of the backline of all these units. Soften impact of backline by leaving clumps of reserve trees along backline. Objective is to meet Forest Plan VQO of maximum modification.

SILVICULTURE:

Vegetation: This is a large stand with varying conditions throughout. The northern part of the unit is of low productivity with large amount of cull in all species. The southern part of the stand is more productive with larger trees and displays evidence of a large-scale wind disturbance history. This area has 2 distinct cohorts—even-aged hemlock and spruce in the overstory and a 10-15 foot tall layer of hemlock saplings in the understory. There is a good mix of species throughout the entire unit. The overstory is composed of western hemlock, Sitka spruce, western red cedar, Alaska yellow cedar, and mountain hemlock. The shrub layer consists of blueberry and menziesia. There are light, scattered mistletoe infections. Yellow cedar decline is present in the northern section of the unit in moderate severities.

Desired Future Condition: Stand will be predominantly even-aged with reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure in the areas of high value marten habitat. Also, leave other reserve areas of low-productivity forest, stream buffers, or steep slopes throughout the unit to reduce total opening size. Reserve areas may be clumped to obtain windfirmness. Where possible, retain trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that approximately 2 acres will be removed from the unit along the eastern edge of the northern 'finger' of the unit to avoid unstable soils (BMP 13.2, 13.5). About 1 acre of slopes greater than 72% will be harvested.

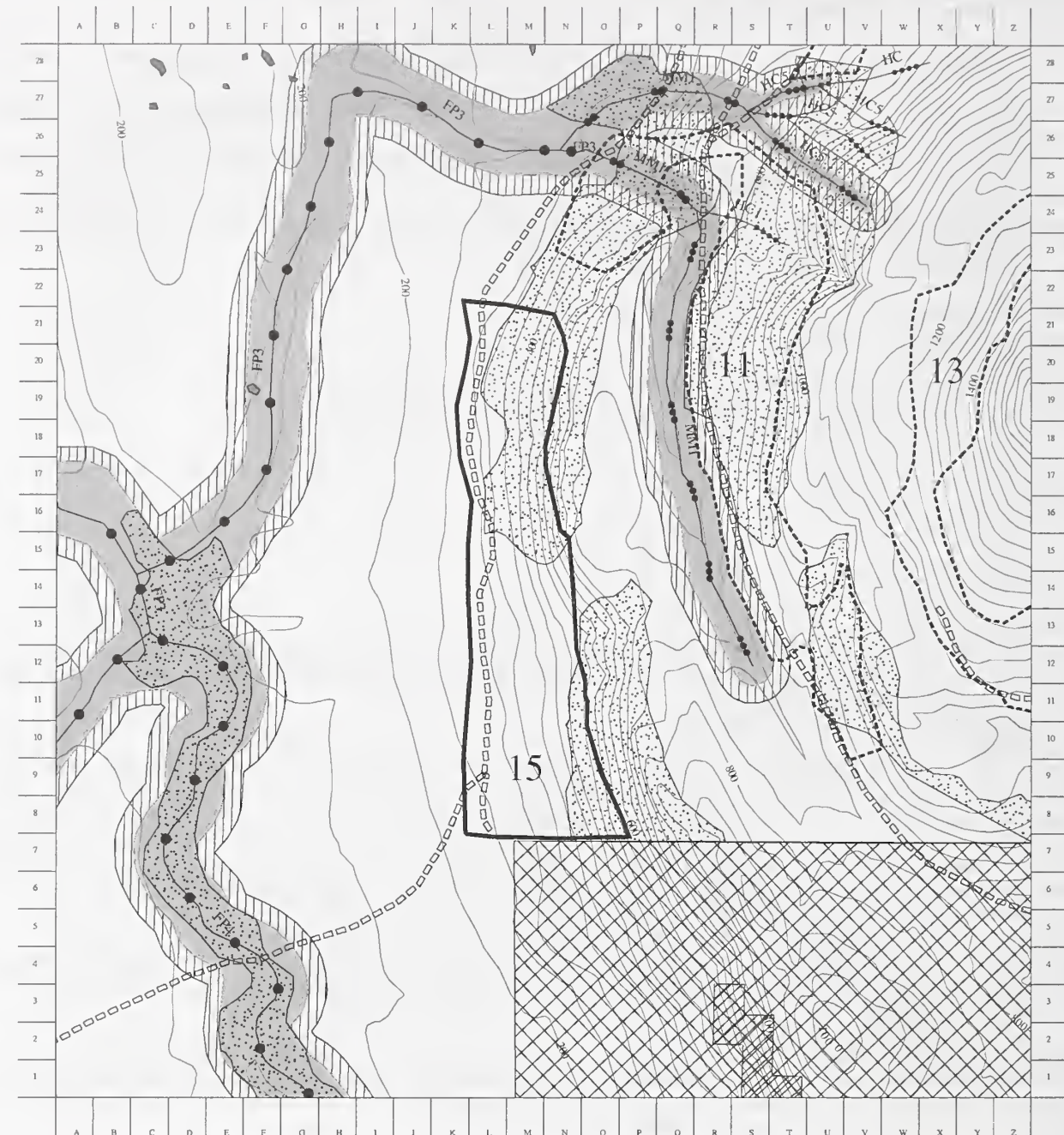
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:15 (58 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON - NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: //sfiles/office/gis/gravina/alan/postscript/grodpl_15.eps
AML located: //sfiles/unit/km/timber/personal/al/aml/grodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	15	Planned Unit Acres:	58	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	298-108
		Logging Prescriptions:	short-span cable	Town/Range/Sect:	75S90E31
				Total Estimated Harvest Volume (CCF):	3,691

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

Retain integrity of property line on southern portion of unit.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Lower-elevation sites within this unit are located in low productivity, muskeg transitional zone, dominated by western hemlock-western red cedar and mixed conifer forest types. Further upslope into the unit, the forest type transitions to a western hemlock/Sitka spruce dominated overstory. Windthrow potential is estimated to be high. Mistletoe infections are light to moderate in severity, but present in nearly all western hemlock. Understory is sparse, dominated by ferns and, in the draws, devil's club.

Desired Future Condition: Stand will be predominantly even-aged with reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped, in areas of high value marten habitat. Also, leave areas of low productivity and slopes greater than 72% where present. Position reserve areas so as to break up unit, reduce opening size and maximize old growth forest along road in this long, narrow unit.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that approximately 4.5 acres of slopes greater than 72% in the along eastern edge of the unit in the central and southern parts will be excluded from the unit to avoid unstable soils (BMP 13.2, 13.5). No slopes greater than 72% will be harvested.

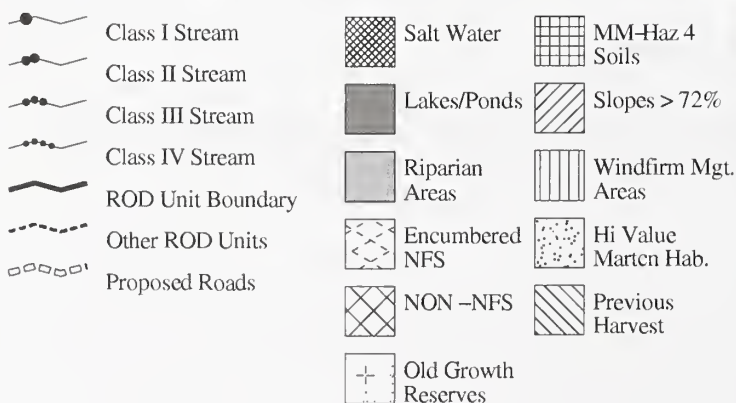
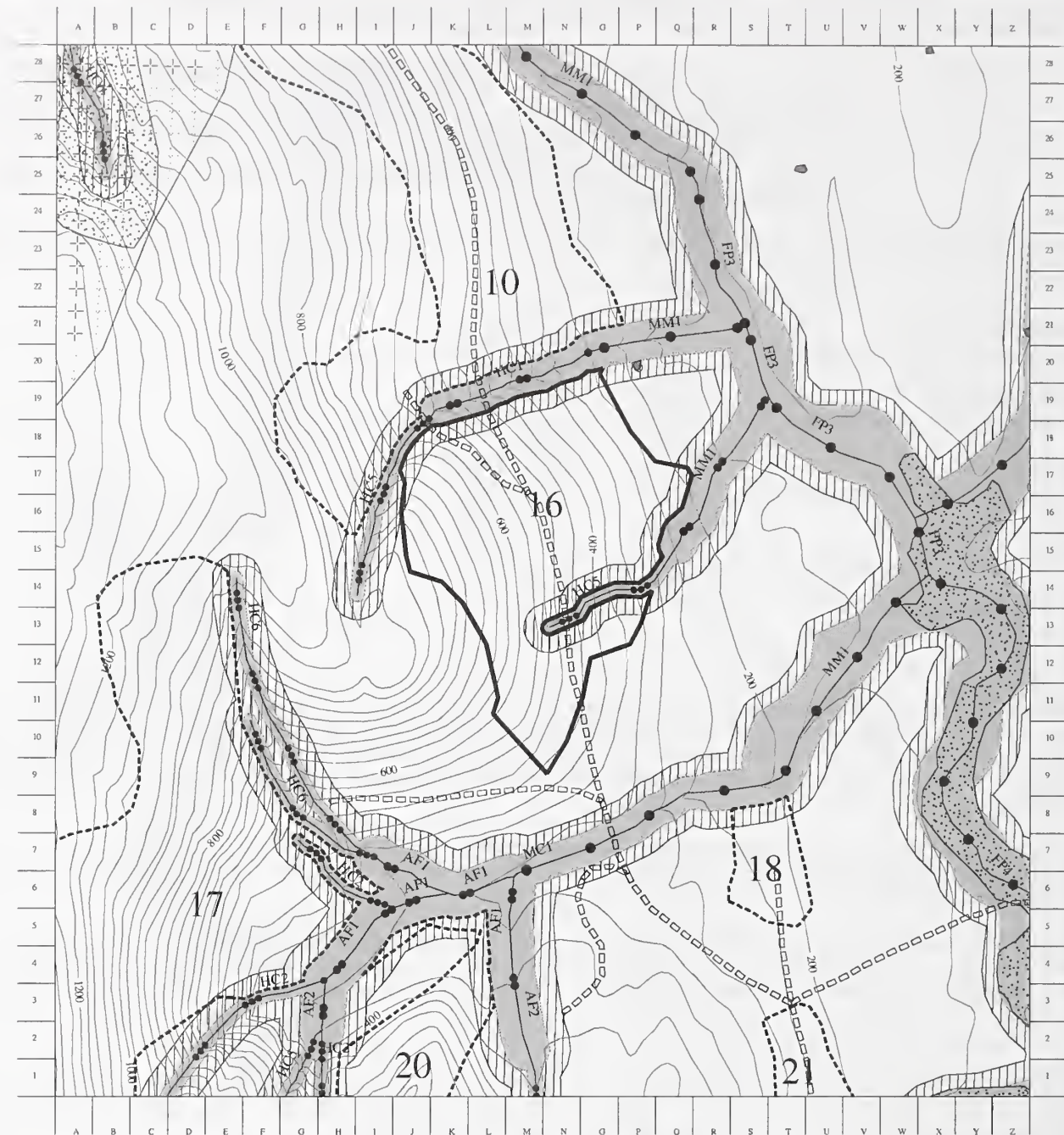
TIMBER:

This unit is designed for shovel yarding and short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:16 (65 Acres)



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grodpl_16.cps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number: 16	Planned Unit Acres: 65	Silvicultural Prescription: EACCR	
LUD: TP		Quad: KTNB6SE	VCU Number: 76301
	Primary WAA Number: 101	Photo: 198-68	Town/Range/Sect: 75S89E36
	Logging Prescriptions: short-span cable	Total Estimated Harvest Volume (CCF):	3,507

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC5 East: Sideslope Standard and Guideline buffer required

Class II (TTRA) HC1 North: 100-foot or greater buffer required

Class III HC5 West: Sideslope Standard and Guideline buffer required

Class II (TTRA) MM1 East: 120-foot Standard and Guideline or greater buffer to form unit boundary

Class I (TTRA) MM1 North: 120-foot Standard and Guideline or greater buffer to form unit boundary

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: The overstory is dominated by western hemlock and contains minor components of Sitka spruce, western red cedar, and Alaska yellow cedar. Stand has low to moderate productivity. Windthrow potential is moderate to high. The shrub layer consists of blueberry, salal, and menziesia.

Desired Future Condition: Stand will be predominantly even-aged with reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave areas of low productivity, stream buffers and slopes greater than 72% if present. The reserve areas may be clumped to maintain windfirmness. Position reserve areas to break up unit, reduce opening size, and maximize old-growth forest along road, as this unit borders Unit 10. Where possible, retain trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

No resource concerns were identified.

TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:17 (181 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grrodpl_17.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	17	Planned Unit Acres:	181	Silvicultural Prescription:	2ACCR
LUD:	SV			Quad:	KTNB6SE
				VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-68
				Town/Range/Sect:	76S89E1
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):	7,262

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC6 Northeast: Sideslope Standards and Guides buffer required

Class III HC2 East: Sideslope Standard and Guideline buffer required

Class III HC2/HC5 East: Sideslope Standard and Guideline buffer required

Class II (TTRA) AF1 Northeast: 140-foot Standard and Guideline or greater buffer required

Class II (TTRA) AF1 East: 140-foot Standard and Guideline or greater buffer required

Class III HC6 East: Sideslope Standard and Guideline buffer required

GEOLOGY:

This unit was not visited by the Forest Geologist; it was visited by other resource specialists and no karst resource concerns were noted. (The "shist" of "phyllite" noted in the soils report is most likely the shale member of the Nahenta Formation.) The underlying geologic strata is the Nahenta Formation, which is primarily carbonaceous shale with very minor thin limestone interbeds. The Forest Geologist mapped this strata on north Gravina Island, adjacent to this unit, in summer 2003 and no karst development was noted. Based on mapping of Berg (1973) and field reconnaissance during summer 2003, it was determined that karst development was unlikely in this unit. Because a small portion of the strata is calcareous, a designation of low vulnerability was given to this unit.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit lies in an east-facing bowl just below Dall Ridge. It is dominated by western hemlock with scattered Sitka spruce and areas of Pacific silver fir. Topography is benchy, especially in the upper reaches. Understory has abundant advanced regeneration, including Pacific silver fir.

Desired Future Condition: Stand will be managed as two-aged with windfirm reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a two-aged clearcut with reserves prescription. Retain trees either singly, in clumps, or in strips in a way so that overall crown competition factor is 30 or greater. Approximately 20% of the acres will be placed in reserve in areas of oversteepened slopes. Throughout the rest of the unit, 20% of the basal area will be retained scattered singly throughout unit. These trees to be retained will be designated by description. There will be approximately 40% of the stand retained to accomplish the objective

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that slopes greater than 85% in the north central and southeastern parts of the unit will be reserved from harvest to avoid unstable soils (see Silviculture section) (BMPs 13.2, 13.5). In the central portion of the unit with slopes from 65% to 85%, full suspension is required; this will be achieved with helicopter harvest. About 34 acres of slopes greater than 72% will be harvested.

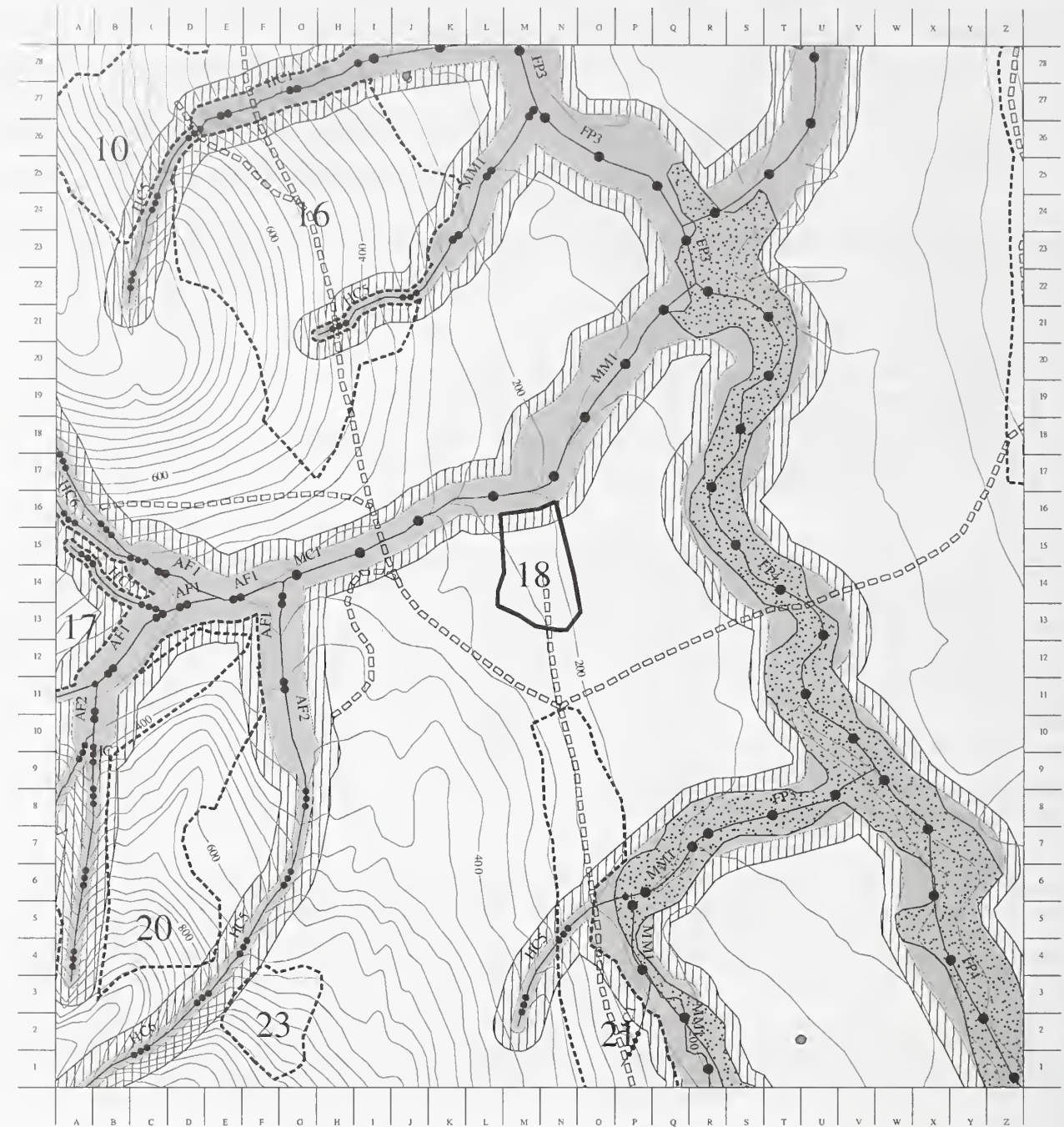
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:18 (8 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /f:/files/office/gis/gravina/alan/postscript/grrodpl_18.eps
AML located: /f:/files/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	18	Planned Unit Acres:	8	Silvicultural Prescription:	2ACCR		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-66	Town/Range/Sect:	76S89E1
		Logging Prescriptions:	shovel yarding	Total Estimated Harvest Volume (CCF):		274	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class I (TTRA) MM1North: 120-foot Standard and Guideline or greater buffer required to form unit boundary

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: The overstory is dominated by western hemlock and mountain hemlock with minor amounts of Sitka spruce and western red cedar. Terrain is rolling with gentle slopes. Most advanced regeneration is present on upraised microsites. The shrub layer consists of blueberry, skunk cabbage, deer cabbage, and salal. Light wind disturbance and mistletoe infections are evident.

Desired Future Condition: Stand will be managed as two-aged with windfirm reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a two-aged clearcut with reserves prescription. Retain trees either singly, in clumps, or in strips in a way so that overall crown competition factor is 30 or greater. This treatment will help maintain the western red cedar component in the regenerated stand. There will be approximately 30-40% basal area of the stand retained to accomplish the objective T2

SOILS:

No resource concerns were identified.

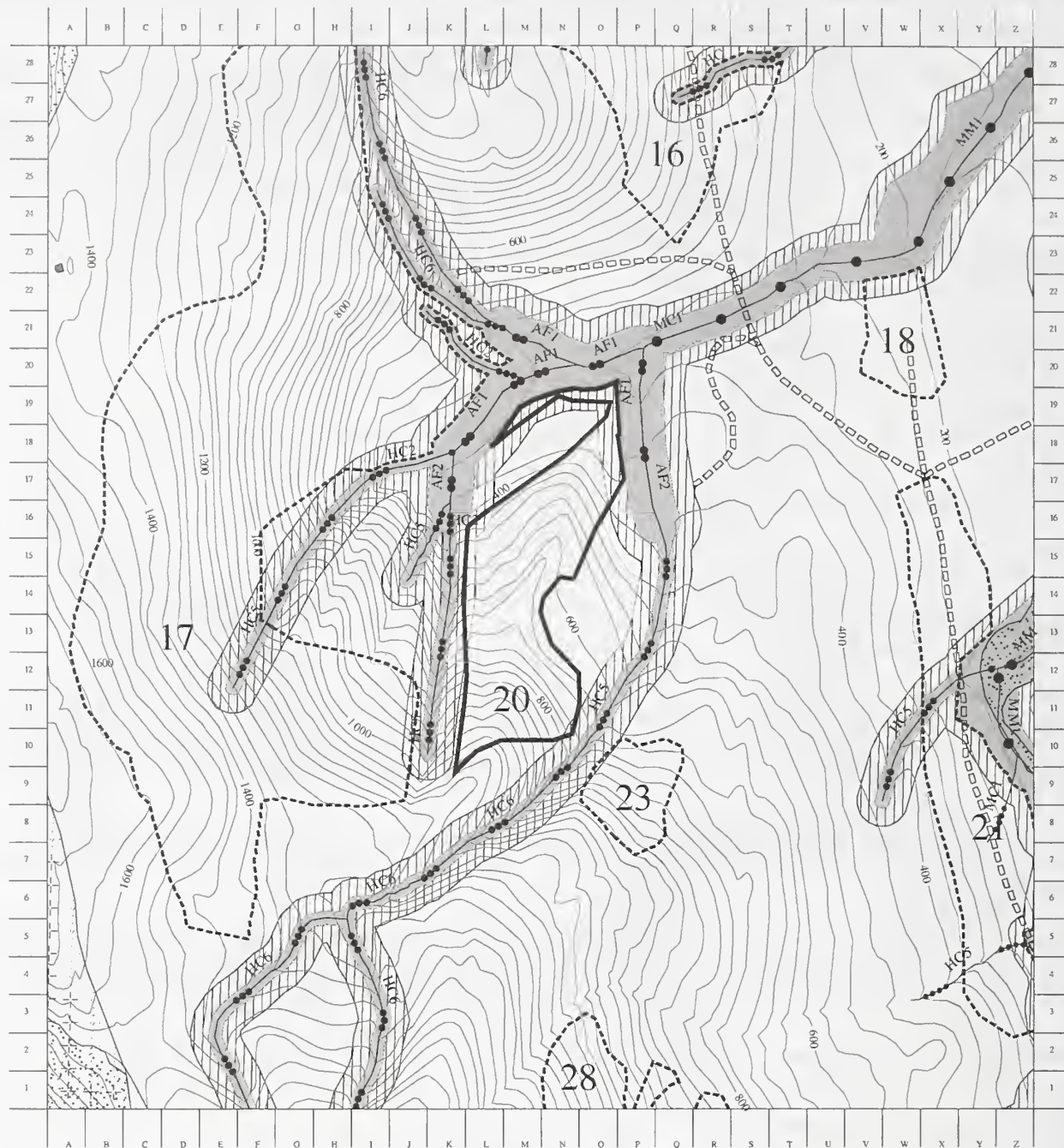
TIMBER:

This unit is designed for shovel yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:20 (32 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /s/files/office/gis/gravina/alan/postscript/grrodpl_20.eps
AML located: /s/files/unit/km/timber/personal/al/aml/grrodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	20	Planned Unit Acres:	32	Silvicultural Prescription:	CC		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-68	Town/Range/Sect:	76S89E1
		Logging Prescriptions:	ss cable/ helicopter	Total Estimated Harvest Volume (CCF):			2,104

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II (TTRA) AF1 North: 140-foot Standard and Guideline or greater buffer required

Class II (TTRA) AF2 East: 140-foot Standard and Guideline or greater buffer required

~~Class III HC2/HC5 West: Sideslope Standard and Guideline buffer required~~

Class III HC5 Southeast: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Moderately productive site located on steep slopes. The overstory is composed of western hemlock, Sitka spruce, western red cedar, and Alaska yellow cedar. There are moderately severe infections of western hemlock scattered throughout the unit. A few areas of cedar decline were noted. There were moderate amounts of physical defect and stem decay was heavy, particularly in the western hemlock and yellow cedar. The shrub layer consists of blueberry, menziesia, and devil's club.

Desired Future Condition: Stand will be even-aged. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. This will reduce mistletoe, maximize economic return, regenerate a healthy stand with less defect, and minimize risk of windthrow.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that slopes greater than 72% in the southern 1/3 of the unit require full suspension (helicopter yarding) to protect potentially unstable soils (BMP 13.9). About 9 acres of slopes greater than 72% will be harvested.

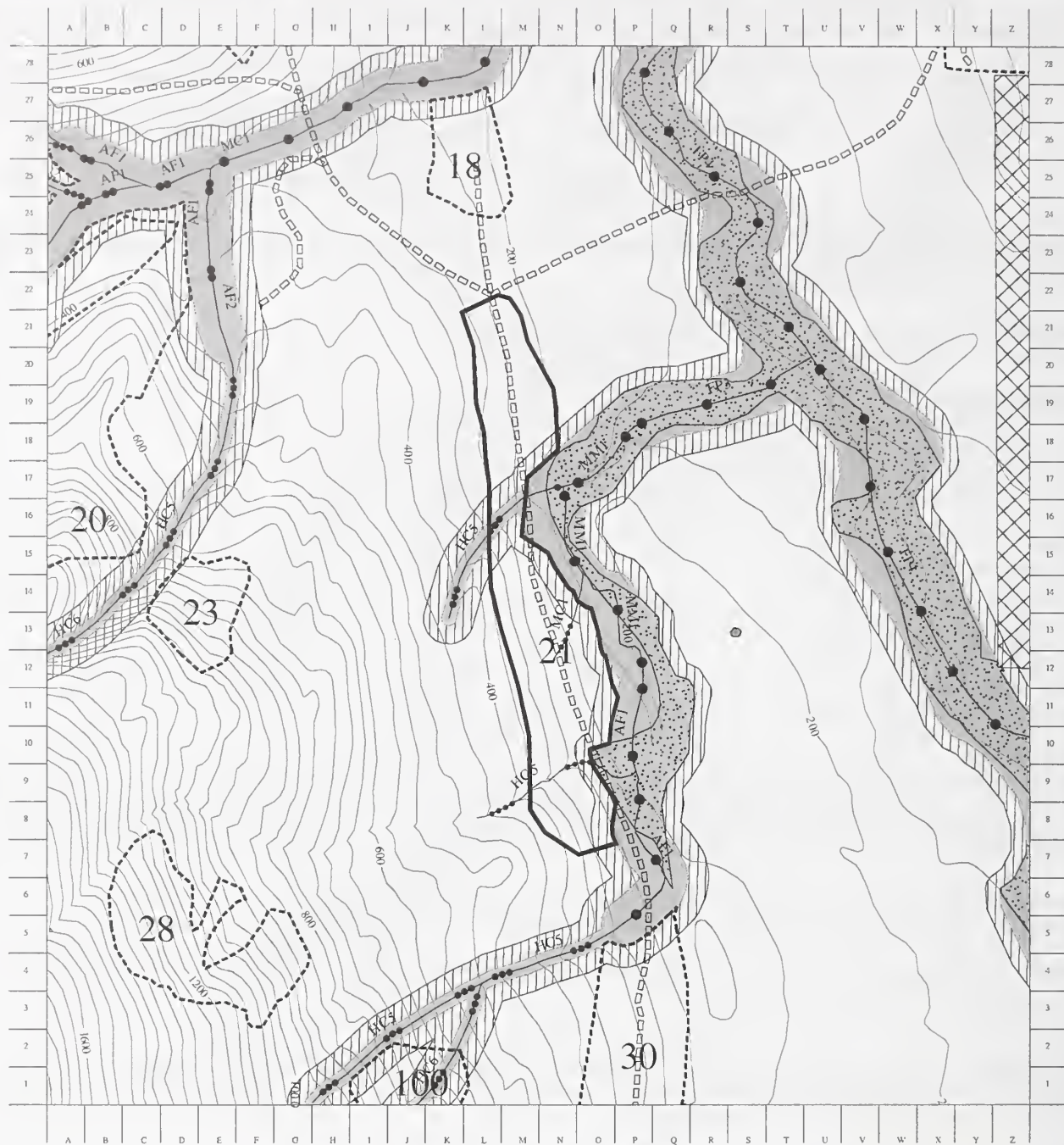
TIMBER:

This unit is designed for short-span cable and helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:21 (39 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /f:/files/office/gis/gravina/alan/postscript/grodpl_21.eps
AML located: /f:/files/unit/km/timber/personal/al/aml/grodpl_aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	21	Planned Unit Acres:	39	Silvicultural Prescription:	CC		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-68	Town/Range/Sect:	76S89E1
		Logging Prescriptions:	ss cable/ shovel	Total Estimated Harvest Volume (CCF):			2,491

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class I (TTRA) FP3 East: 250-foot or greater buffer required

Class III HC5 Northcentral: Sideslope Standard and Guideline buffer required

Class I (TTRA) MM1 East: 120-foot Standard and Guideline or greater buffer required

Class IV HC5 East central: Requires directional felling, partial, or full suspension

Class IV MC1 Southcentral: Requires directional felling, partial, or full suspension

Class I (TTRA) AF1 Southeast: 140-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Concentrate reserve trees in windfirm clusters along road corridor to provide some old-growth stands along main arterial.

SILVICULTURE:

Vegetation: This unit has fairly even, gentle terrain with an east aspect. The forest type is varied and patchy with a heavy red cedar component. There are many areas of low site productivity with mixed conifer forest that have a high numbers of snags and very open canopies. There are also other pockets of higher volume timber with both red cedar and yellow cedar. Despite the high occurrence of cedar, most of the advanced regeneration is western hemlock. Windthrow hazard is estimated to be low. There are light infections of mistletoe in most of the hemlock throughout the unit, and some cedar decline is present as well. Salal is the dominant understory species.

Desired Future Condition: Future stand will be even aged. Natural regeneration may be inhibited in areas of heavy salal cover. Monitor closely. Future treatments may include planting in areas of salal cover and/or pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. This will reduce mistletoe and highly defected stems, maximize economic return, and minimize risk of windthrow. Attempt to feather unit edges to minimize risk of windthrow along unit edge. Where possible, retain unmerchantable trees throughout unit, particularly red and yellow cedar trees to encourage cedar regeneration. T2

SOILS:

No resource concerns were identified.

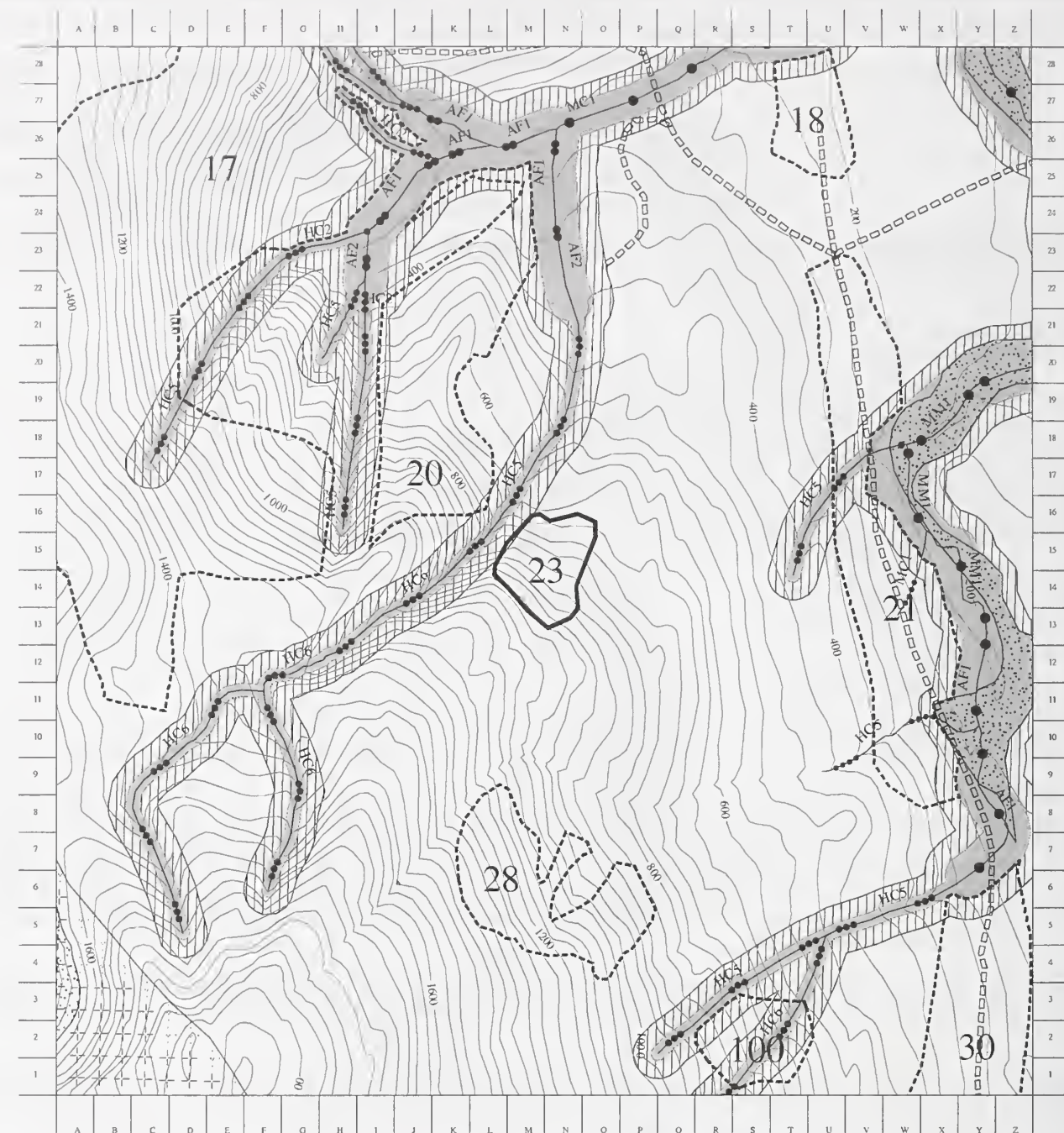
TIMBER:

This unit is designed for short-span cable and shovel yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:23 (8 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_23.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	23	Planned Unit Acres:	8	Silvicultural Prescription:	EACCR		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-66	Town/Range/Sect:	76S89E1
		Logging Prescriptions:	Helicopter yarding	Total Estimated Harvest Volume (CCF):			423

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC5 Northwest: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit overstory is varied and is dominated by western hemlock (42%), mountain hemlock (26%), and Alaska yellow cedar (16%), with minor components of spruce and western red cedar. There is minor windthrow evidence. There are minor to moderate severities of mistletoe infections scattered throughout.

Desired Future Condition: The middle story canopy layer will become the dominant overstory, which should allow for release of established stems in the understory. Natural regeneration through release of the understory is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply an even-aged clearcut with reserves prescription. Retain all trees less than or equal to 15 inches in diameter. There are approximately 20 yellow cedar trees/acre less than 15 inches. This will allow for adequate regeneration of yellow cedar on the site. This will maintain some forest structure throughout, promote soils stability and allow for release of the understory cohort. The helicopter yarding system should enable protection of the advanced regeneration in the understory.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation located slopes greater than 72% along the upper western boundary. Full suspension is required (helicopter yarding) to maintain slope stability (BMPs 13.9). About 3 acres of slopes greater than 72% will be harvested.

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:28 (19 Acres)



- | | | | | | |
|--|-------------------|--|---------------------|--|----------------------|
| | Class I Stream | | Salt Water | | MM-Haz 4 Soils |
| | Class II Stream | | Lakes/Ponds | | Slopes > 72% |
| | Class III Stream | | Riparian Areas | | Windfirm Mgt. Areas |
| | Class IV Stream | | Encumbered NFS | | Hi Value Marten Hab. |
| | ROD Unit Boundary | | NON-NFS | | Previous Harvest |
| | Other ROD Units | | Old Growth Reserves | | |
| | Proposed Roads | | | | |



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 A1 Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_28.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	28	Planned Unit Acres:	19	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
				VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-65
				Town/Range/Sect:	76S89E12
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):	1,084

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Stand is located at moderately high elevation (1300-1500 ft.) and is low to moderate in productivity with a high amount of physical defect in standing timber. The overstory is composed of western hemlock (61%), western red-cedar (4%), Alaska yellow cedar (2%), and mountain hemlock (33%). Yellow cedar decline was severe in the southeastern portion of the stand. The shrub layer consists of blueberry and menziesia.

Desired Future Condition: The middle story canopy layer will become the dominant overstory, which should allow for release of established stems in the understory. Natural regeneration through release of the understory is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply an even-aged clearcut with reserves prescription. Retain all trees less than or equal to 13 inches in diameter. This will maintain some forest structure throughout, promote slope stability and allow for release of the understory cohort. The helicopter yarding system should enable protection of the advanced regeneration in the understory. There were approximately 250 yellow cedar seedlings/acre in the understory, which should maintain yellow cedar on the site.

SOILS:

Slopes Greater than 72%: No slopes greater than 72% will be harvested.

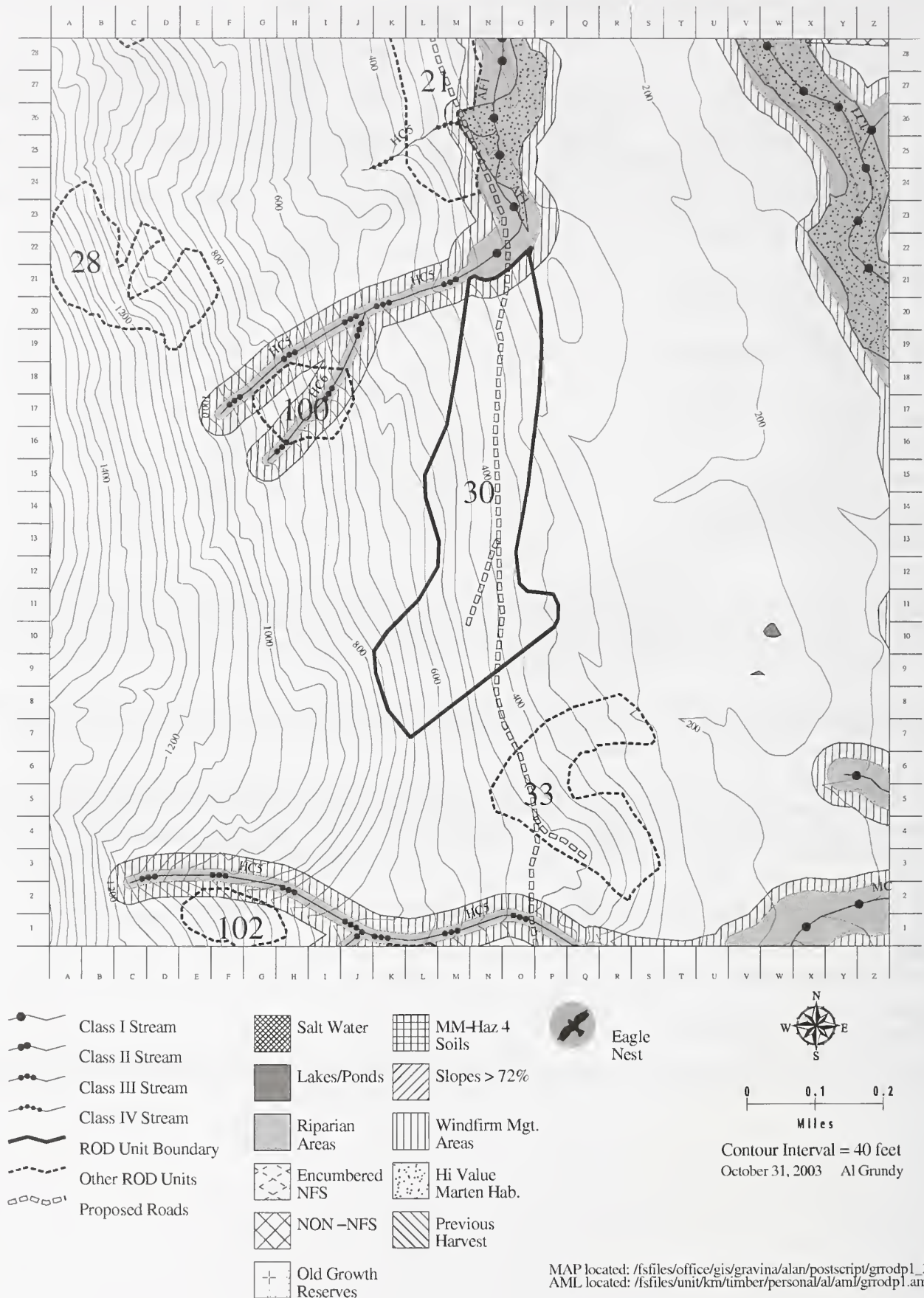
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:30 (60 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	30	Planned Unit Acres:	60	Silvicultural Prescription:	CC		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	7631
		Primary WAA Number:	101	Photo:	298-107	Town/Range/Sect:	76S90E7
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):		3,339	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class I (TTRA) AF1 North: 140-foot Standard and Guideline or greater buffer required
Class III HC5 Northwest corner: Sideslope Standard & Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Concentrate reserve trees in windfirm clusters along road corridor to provide some old-growth stands along main arterial.

SILVICULTURE:

Vegetation: This unit has fairly even, gentle terrain with an east aspect. The forest type is varied and patchy with a heavy red cedar component. There are many areas of low site productivity with mixed conifer forest that has high numbers of snags and very open canopies. There are also other pockets of higher-volume timber with both red cedar and yellow cedar. Despite the high occurrence of cedar, most of the advanced regeneration is western hemlock. Windthrow hazard is estimated to be low, except in the northern portion of the unit, where windthrow potential is estimated to be moderate to high. There are light infections of mistletoe in the hemlock and some cedar decline. There is moderate to moderately high amounts of physical defect present, particularly in the western red cedar. Salal is the dominant understory species.

Desired Future Condition: Future stand will be predominantly even aged. Natural regeneration may be inhibited in areas of heavy salal cover. Monitor closely. Future treatments may include planting in areas of salal cover and/or pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription to reduce mistletoe, maximize economic return, regenerate a healthy stand with less defect, and minimize risk of windthrow. Where possible, attempt to leave some red cedar and yellow cedar trees to encourage a cedar component in the advanced regeneration. T2

SOILS:

No resource concerns were identified.

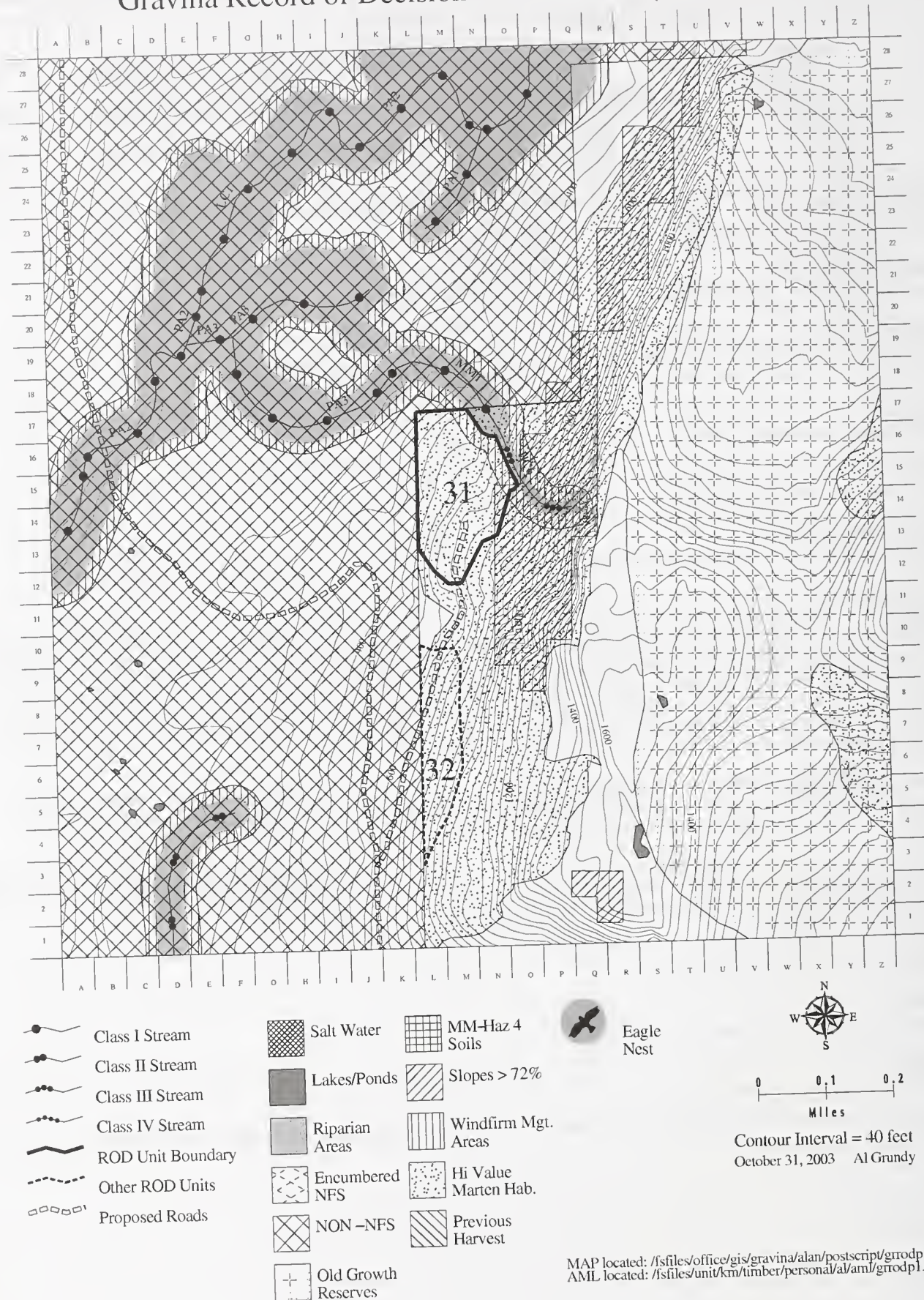
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:31 (17 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	31	Planned Unit Acres:	17	Silvicultural Prescription:	EACCR		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-11	Town/Range/Sect:	76S90E9
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):			1,224

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

W

FISH/WATERSHED:

Class I (TTRA) MM1 Northeast: 120-foot Standard and Guideline or greater buffer required

Class III HC6 East: Sideslope Standard & Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

Protect boundary integrity along land ownership lines.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit is a high-volume, productive, western hemlock stand that has even slopes, little mistletoe, minor wind concerns, and very abundant advance regeneration. Stem decay, particularly in the western hemlock, is moderate to severe. The lower reaches transition to a western hemlock-western red cedar forest type. Many of the western red cedar have physical damage and stem decay.

Desired Future Condition: Stand will be predominantly even aged with windfirm reserve clumps and scattered trees where possible. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped, throughout the unit, which consists of all high value marten habitat. Reserve areas may be clumped to obtain windfirmness. Where possible, retain trees throughout the unit, particularly snags and near snags of large diameter. Areas excluded from harvest due to steep slopes can count towards reserve requirements for Marten Standards and Guidelines. This prescription will allow for regeneration of a healthy stand with less physical defect and stem decay.

SOILS:

Slopes Greater than 72%: Cliffs in the eastern edge of the unit have been excluded from harvest (BMPs 13.2, 13.5).

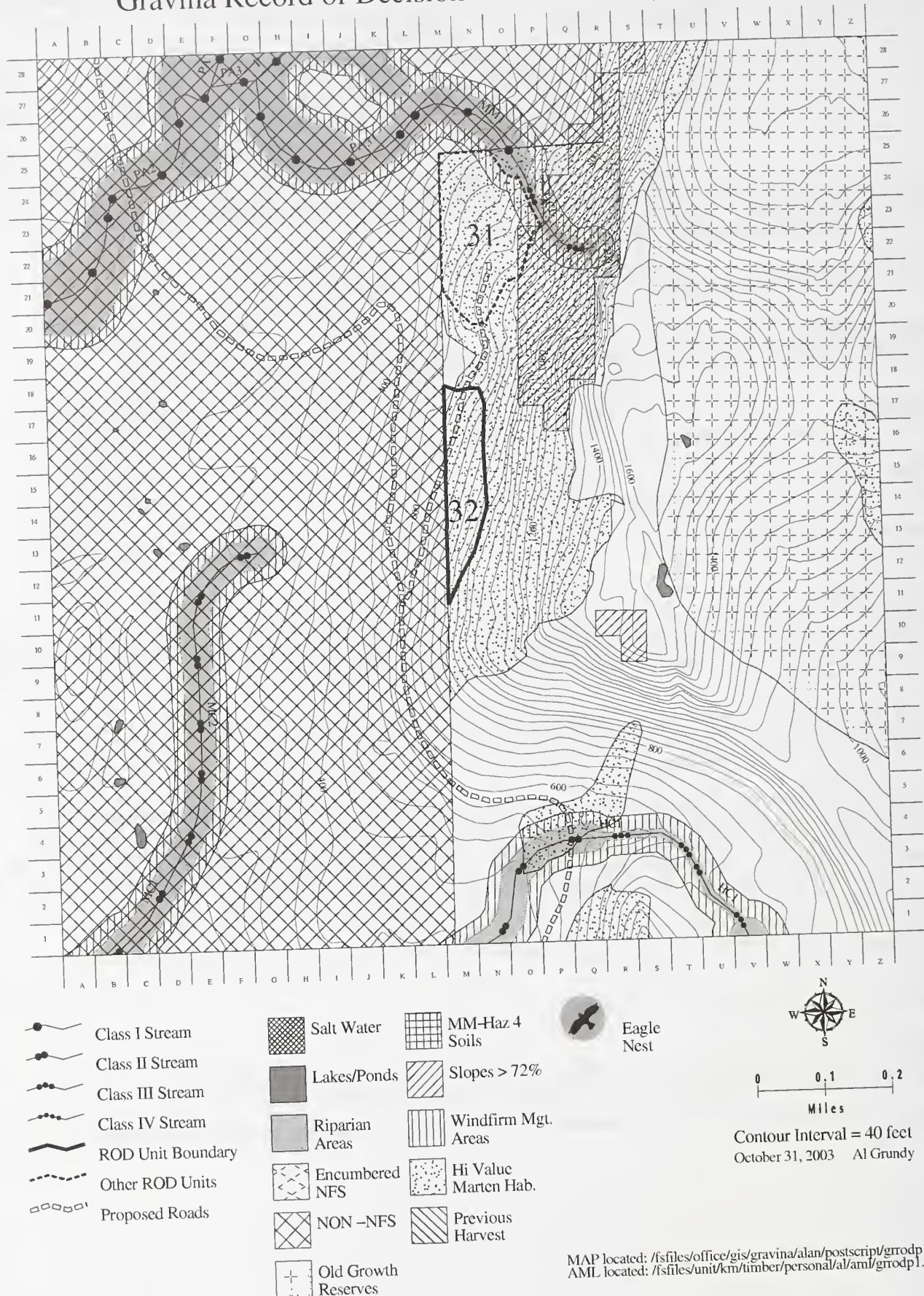
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:32 (9 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	32	Planned Unit Acres:	9	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	298-11,12
		Logging Prescriptions:	short-span cable	Town/Range/Sect:	76S90E9
				Total Estimated Harvest Volume (CCF):	667

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

Maintain boundary integrity.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: The unit is dominated by western hemlock in the overstory and understory, with very minor components of Sitka spruce and western red cedar. Mistletoe is moderate in severity and scattered throughout the unit. Stem decay and physical defect is heavy in western hemlock. Windthrow potential is moderate. The shrub layer consists mainly of blueberry and devil's club.

Desired Future Condition: Stand will be predominantly even-aged with reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped, throughout the unit, which consists of all high value marten habitat. Reserve areas may be clumped along stream buffers. ~~Blind leads and slopes greater than 72% where present to obtain windfirmness. Where possible, retain unmerchantable~~ trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

Slopes Greater than 72%: The eastern unit boundary will be adjusted to avoid slopes greater than 72%.

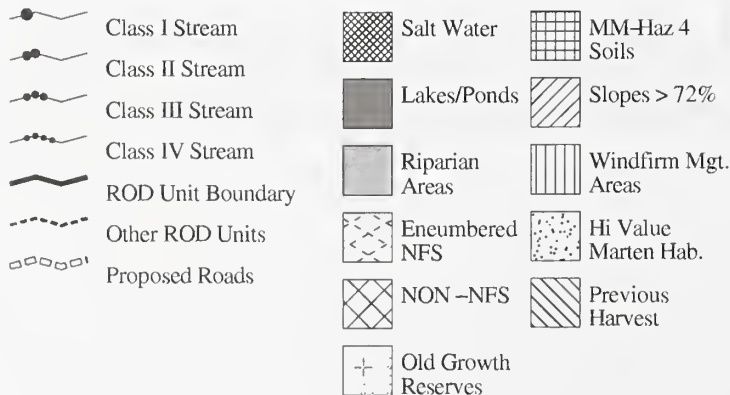
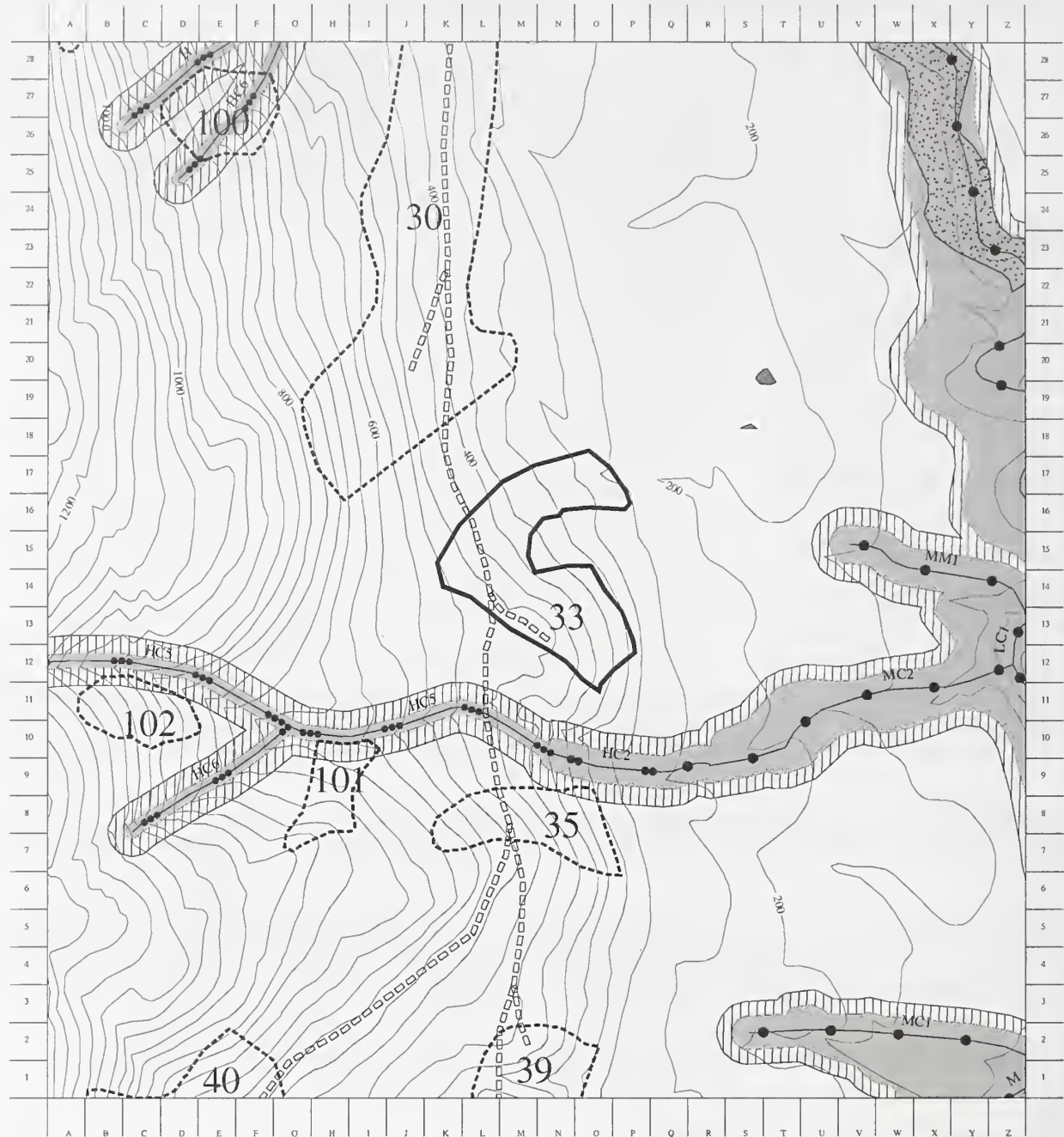
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:33 (23 Acres)



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: f:\files\office\gis\gravina\alan\postscript\grodpl_33.eps
AML located: f:\files\unit\km\timber\personal\al\aml\grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	33	Planned Unit Acres:	23	Silvicultural Prescription:	ST		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-104	Town/Range/Sect:	76S90E7
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):		1,173	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: This unit is comprised of small diameter western hemlock (15-25" dbh) interspersed with yellow cedar and large, highly defected western red cedar. The canopy is very open with less than 50% canopy closure in most areas. Cedar decline is severe. Plant associations include mixed conifer/blueberry/skunk cabbage and western hemlock-western red cedar/salal indicating wetter, low-productivity sites.

Desired Future Condition: Stand will be even aged with a few mature cedar trees per acre scattered through the unit to promote species diversity in the natural regeneration. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a seed tree prescription, leaving 2-5 mature red and/or yellow cedar trees per acre scattered through the unit. Favor yellow cedar seed trees in the southern half of the unit. These trees may be removed once natural regeneration has been established, in approximately 5 years. Natural regeneration should be adequate but will be monitored due to low responses expected in mixed conifer plant associations. T2

SOILS:

No resource concerns were identified.

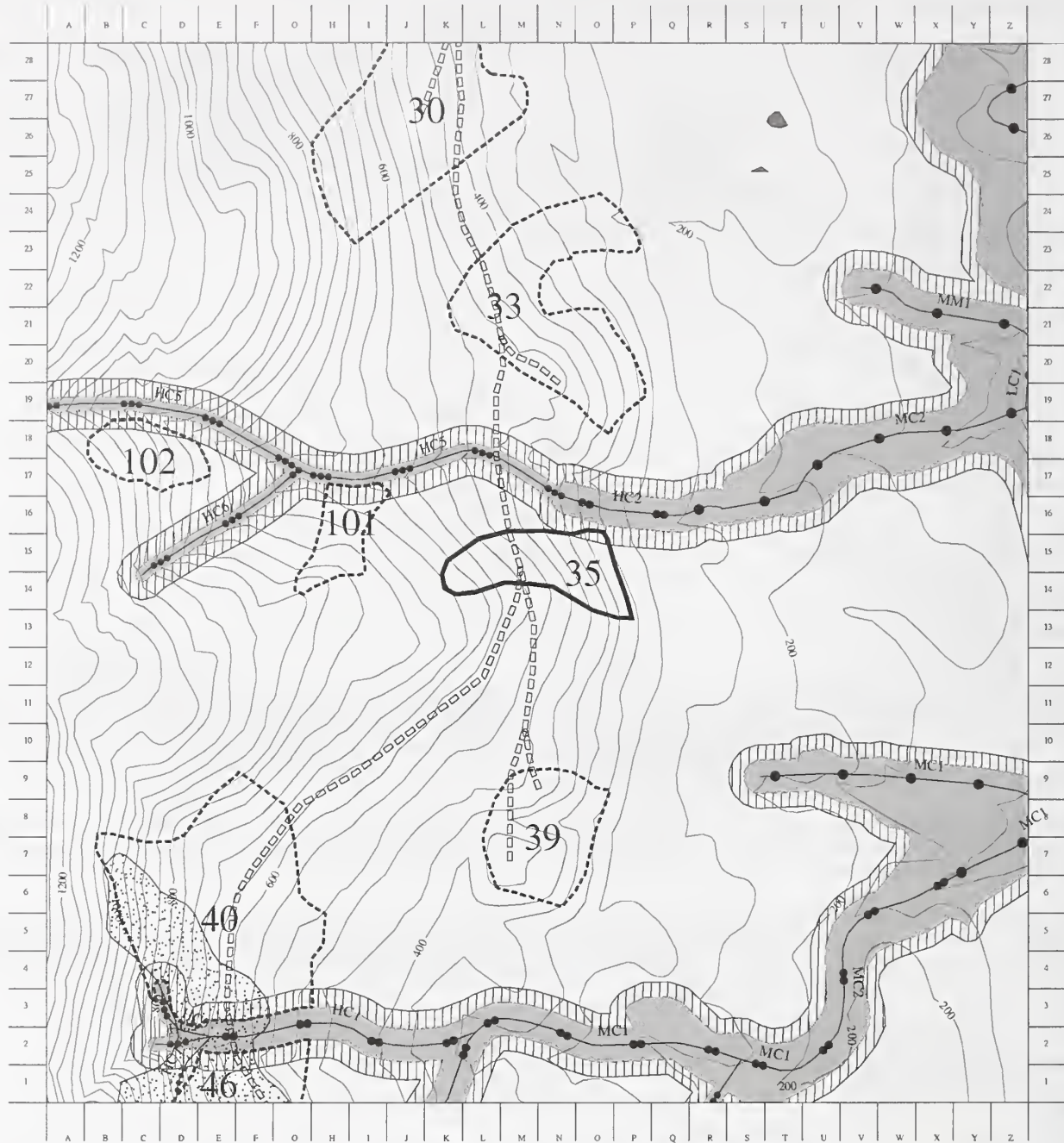
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:35 (10 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves

- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 A1 Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grrodpl_35.eps
AML located: /sfiles/unit/kw/timber/personal/al/aml/grrodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	35	Planned Unit Acres:	10	Silvicultural Prescription:	CC
LUD:	TP			Quad:	KTNB6SE
				VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-104
				Town/Range/Sect:	76S90E18
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):	638

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II HC2 Northeast: 100-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: The stand contains productive western hemlock with large spruce scattered throughout. There are substantial levels of windsnap damage in the western hemlock. Severe frost damage was noted in several Sitka spruce. The overstory is composed of western hemlock, Sitka spruce, and western red cedar. The shrub layer consists of blueberry, devil's club, menziesia, and skunk cabbage.

Desired Future Condition: Stand will be even aged. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. This prescription will reduce mistletoe, maximize economic return, and minimize risk of windthrow. Where possible, retain trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

No resource concerns were identified.

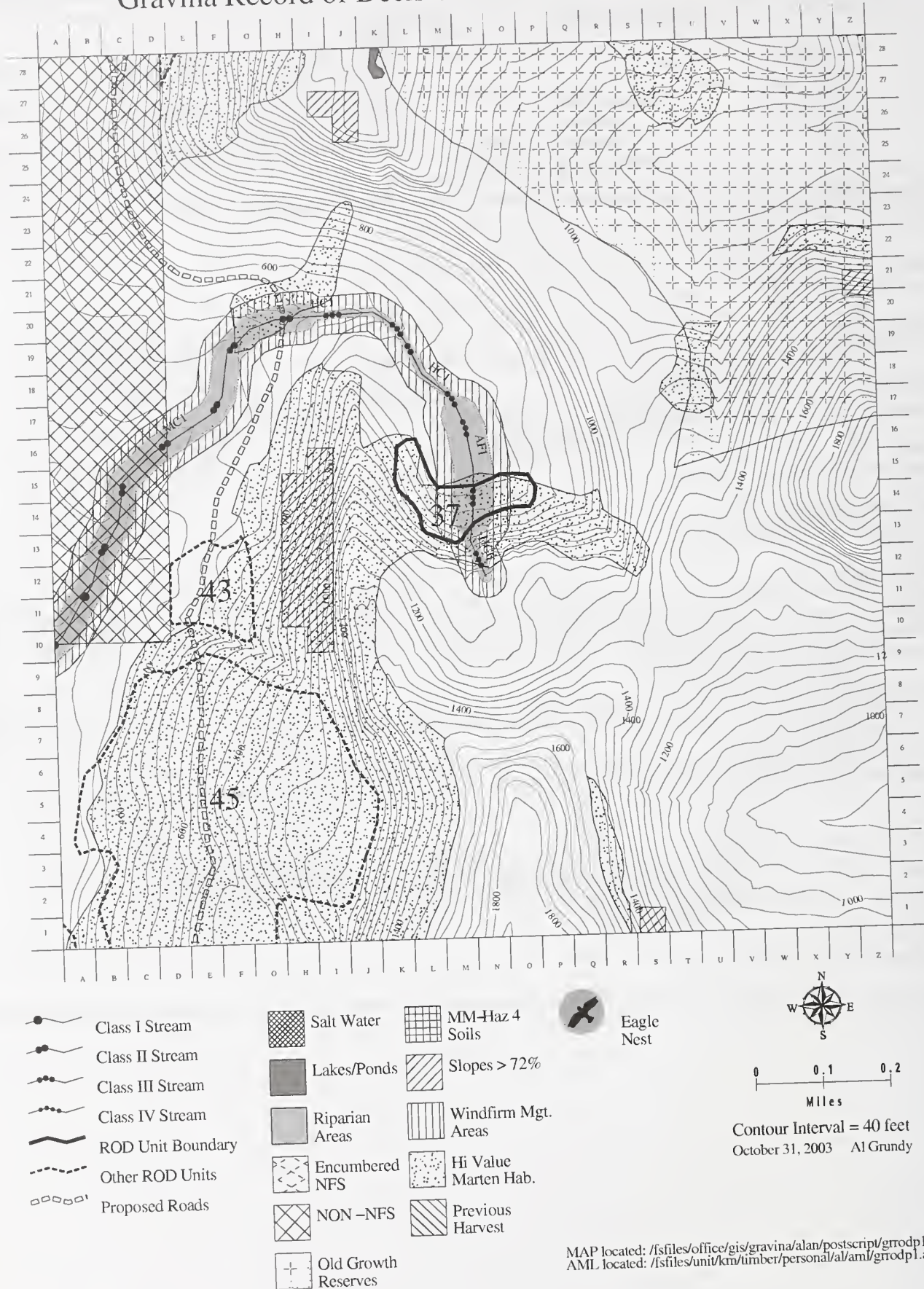
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:37 (9 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	37	Planned Unit Acres:	9	Silvicultural Prescription:	STS		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-13	Town/Range/Sect:	76S90E16
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			365

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III AF1 Southeast: 140-foot Standard and Guideline or greater buffer required

Class III HC6 South: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: This unit has a significant Pacific silver fir component, up to 50% of overstory in places (no Pacific silver fir landed in the plots). The unit has a closed canopy with moderate mistletoe infections and low to medium wind disturbance. The overstory also contains western hemlock and Sitka spruce. The shrub layer consists of blueberry and devil's club.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, removing approximately 50% of the basal area through individual tree marking. Favor mistletoe-free trees as selection for retention. A mix of tree species and sizes will be left to maintain original species composition.

SOILS:

No resource concerns were identified.

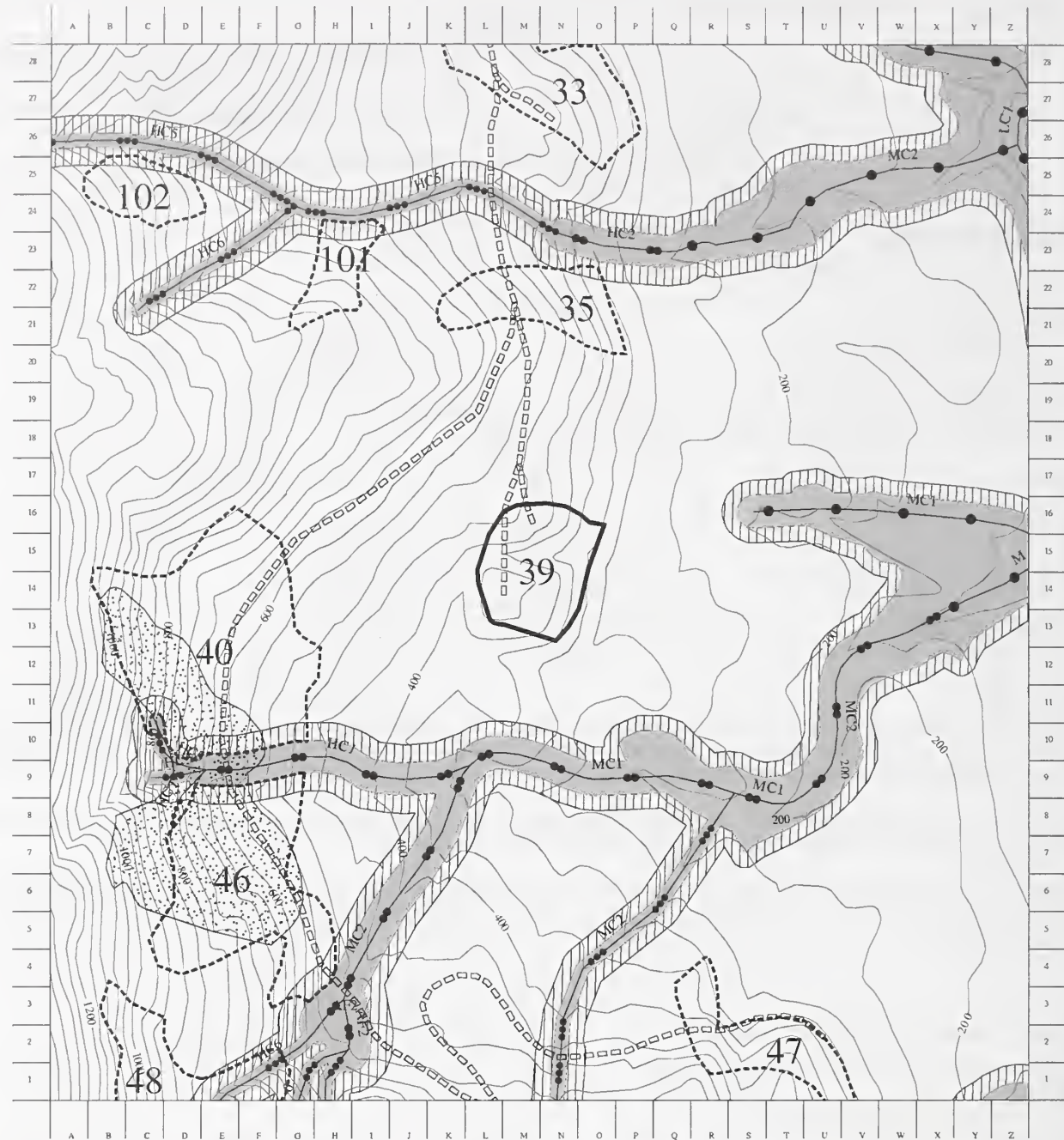
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:39 (13 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves

- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_39.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	39	Planned Unit Acres:	13	Silvicultural Prescription:	ST		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-103	Town/Range/Sect:	76S90E18
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):			633

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: This unit is a low elevation, small "island" that has fairly gentle, rolling topography and lies near the valley bottom. The overstory is varied and dominated by Alaska yellow cedar with minor components of western hemlock, mountain hemlock, western red cedar, Sitka spruce and shore pine. Windthrow evidence was high. Yellow cedar decline occurs in patches throughout the entire unit and is severe in some of these patches.

Desired Future Condition: Stand will be even aged with a few mature cedar trees per acre scattered through the unit to promote species diversity in the natural regeneration. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a seed tree prescription, leaving 2-5 mature, healthy yellow cedar trees per acre scattered through the unit. Favor large, windfirm trees. Trees may be clumped to ensure windfirmness. These trees may be removed once natural regeneration has been established, in approximately 5 years. Natural regeneration should be adequate but will be monitored due to low responses expected in mixed conifer plant associations. T2

SOILS:

No resource concerns were identified.

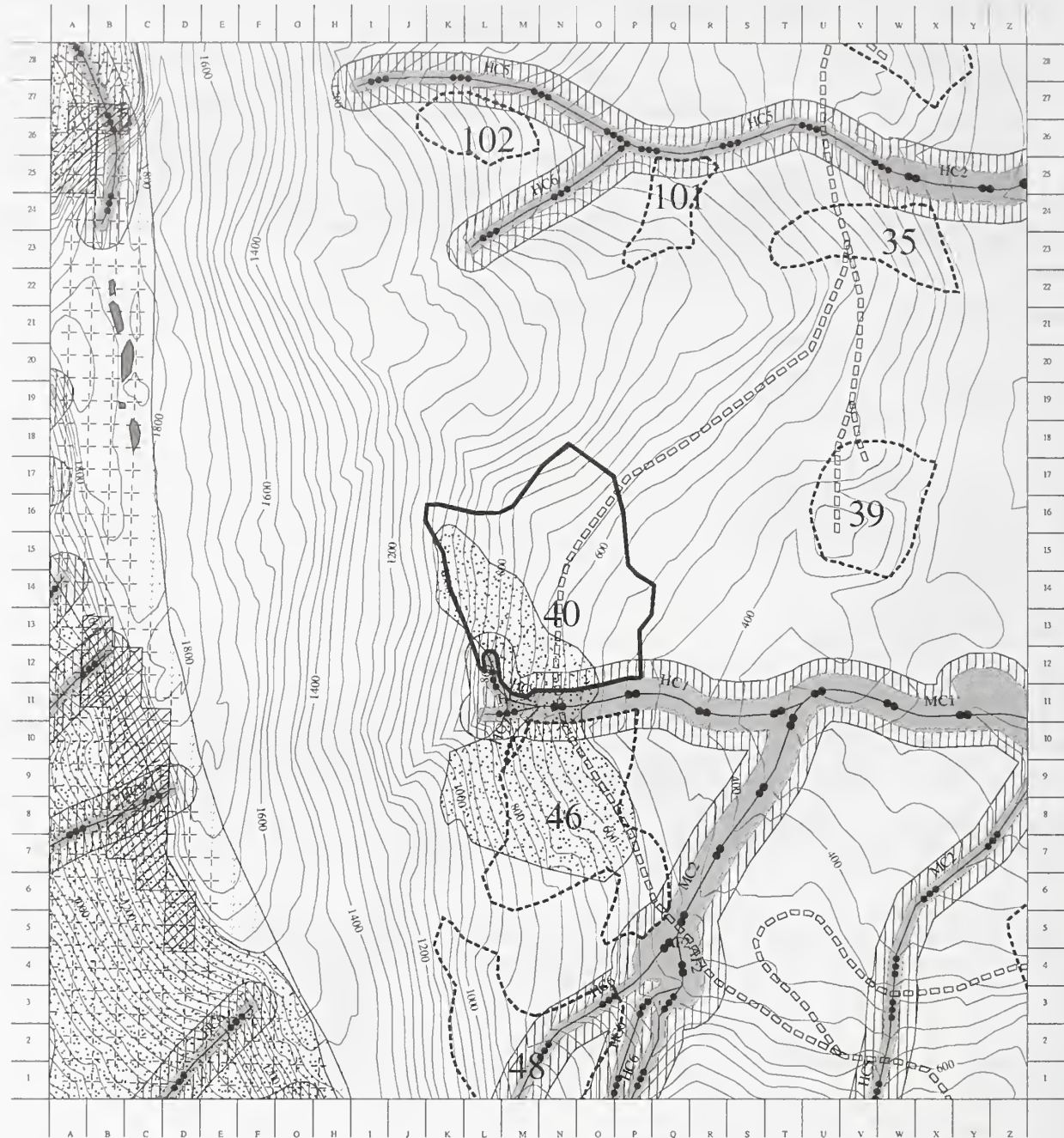
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:40 (37 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodp1_40.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodp1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	40	Planned Unit Acres:	37	Silvicultural Prescription:	CC		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-63	Town/Range/Sect:	76S89E13
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):			2,548

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC5 Southwest: Sideslope Standard & Guideline buffer required

Class II (TTRA) HC1 South: 100-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: The unit contains alternating bands of western hemlock, western red cedar, and Alaska yellow cedar forest and pure western hemlock forest. It has areas of severe mistletoe and high windthrow. The overstory is composed of western hemlock, Sitka spruce, western red cedar, and Alaska yellow cedar. The shrub layer consists of menziesia and blueberry.

Desired Future Condition: Stand will be predominantly even aged with some reserve clumps and scattered trees in the southwestern portion of unit. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. There is an area of high value marten habitat within the unit, in the southwestern portion. Maintain 10-20% of the stand structure in this area. This prescription will reduce mistletoe, maximize economic return, and minimize risk of windthrow. If possible, retain trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

No resource concerns were identified.

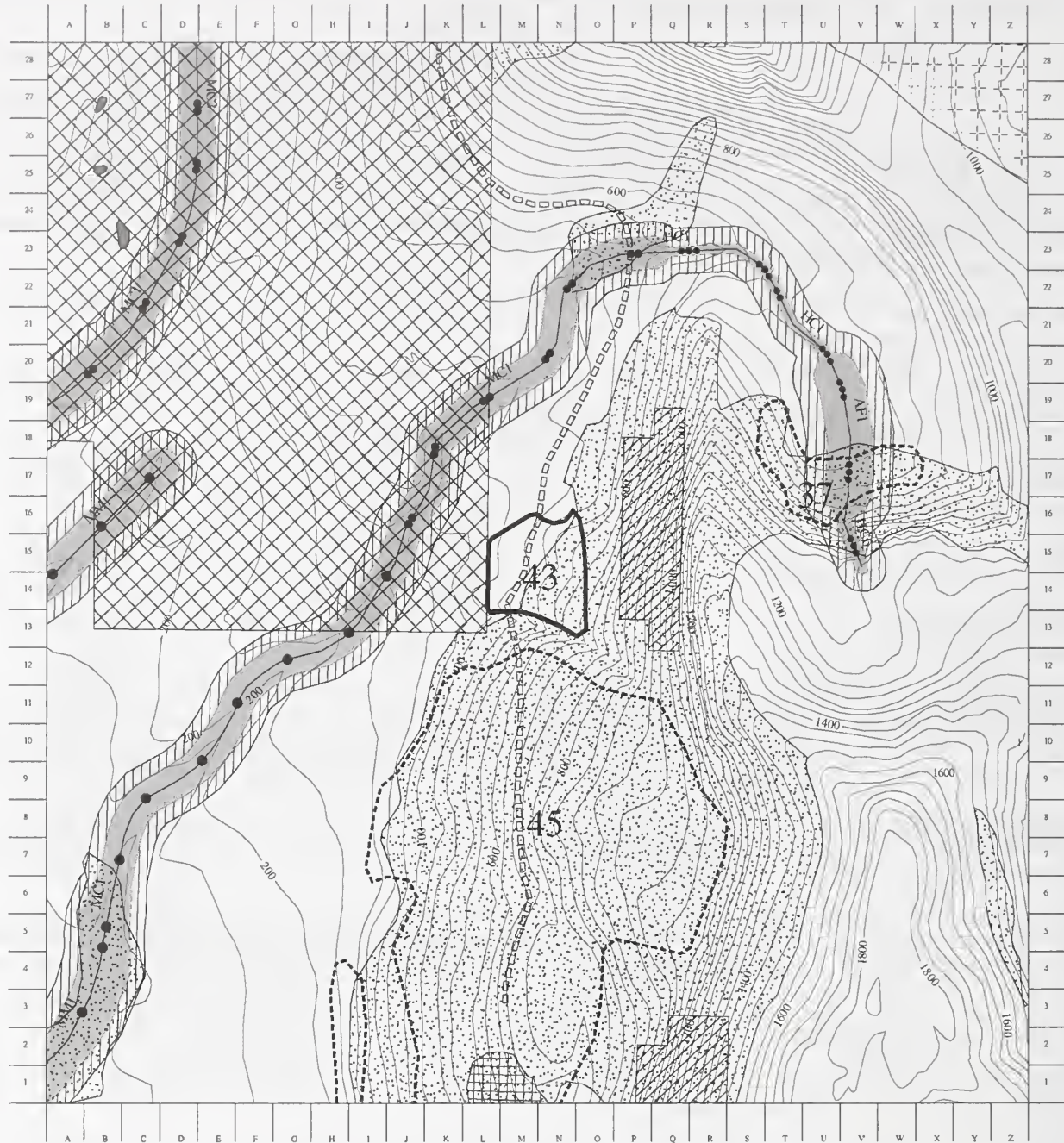
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:43 (9 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz. 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grodpl_43.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	43	Planned Unit Acres:	9	Silvicultural Prescription:	EACCR		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-14	Town/Range/Sect:	76S90E16
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):			657

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

Abuts non-NFS land - maintain integrity of boundary line.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit is dominated by western hemlock. It has a west aspect, a closed canopy, and a sparse understory. The dominant plant association is western hemlock/blueberry. Mistletoe occurs throughout the unit in moderate to severe infections. Windthrow potential is low overall with some areas of high potential.

Desired Future Condition: Stand will be predominantly even aged with windfirm reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped, throughout the areas of high value marten habitat in the unit (southeast half of unit). Reserve areas may be clumped to obtain windfirmness. Where possible, retain trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

No resource concerns were identified.

TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:45 (130 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_45.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	45	Planned Unit Acres:	130	Silvicultural Prescription:	EACCR/GS		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-13	Town/Range/Sect:	76S90E21
		Logging Prescriptions:	long-span cable	Total Estimated Harvest Volume (CCF):			6,937

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

This unit is in the middleground on the northeast side of the bay and for the most part faces away from most of the bay. At least half of unit is visible from northwest corner of the inlet. Concentrate retention in the southern third of this unit that is most visible. Use group selection to create small patches or narrow corridors so the only evidence of harvest is scattered gaps in the canopy and some visible edges created by lines of tree trunks. A smaller amount of scattered retained trees in northern part of unit that is more oblique to the viewing positions will suffice. About 35-40 percent retention in the unit overall is adequate. Objective is to meet at least a Modification VQO.

SILVICULTURE:

Vegetation: Unit is dominated by western hemlock. It has a west aspect, a closed canopy, and a sparse understory. The dominant plant association is western hemlock/blueberry. Mistletoe occurs throughout the unit in moderate to severe infections. Windthrow potential is low overall with some areas of high potential.

Desired Future Condition: Stand will be managed as both even aged and uneven aged with windfirm reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription in northern half of unit (approximately 65 acres). Leave 10-20% of the stand structure, scattered and/or clumped, throughout the areas of high value marten habitat in the northern half of the unit. Leave areas may be clumped in areas of oversteepened slopes and stream buffers to obtain windfirmness for reserve. Ensure that the small unstable section in the north-central portion of the unit is reserved from harvest to address soils concerns. Apply a group selection prescription in the southern half of the unit (approximately 65 acres) to address visual resource concerns. Harvest in small groups and/or strips, retaining approximately 50% of the original basal area of the stand. Openings will not exceed 2 acres and/or strips will be no wider than two times the average tree height.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that there is a small unstable section in the north central portion of the unit, which will be reserved from harvest (BMPs 13.2, 13.5).

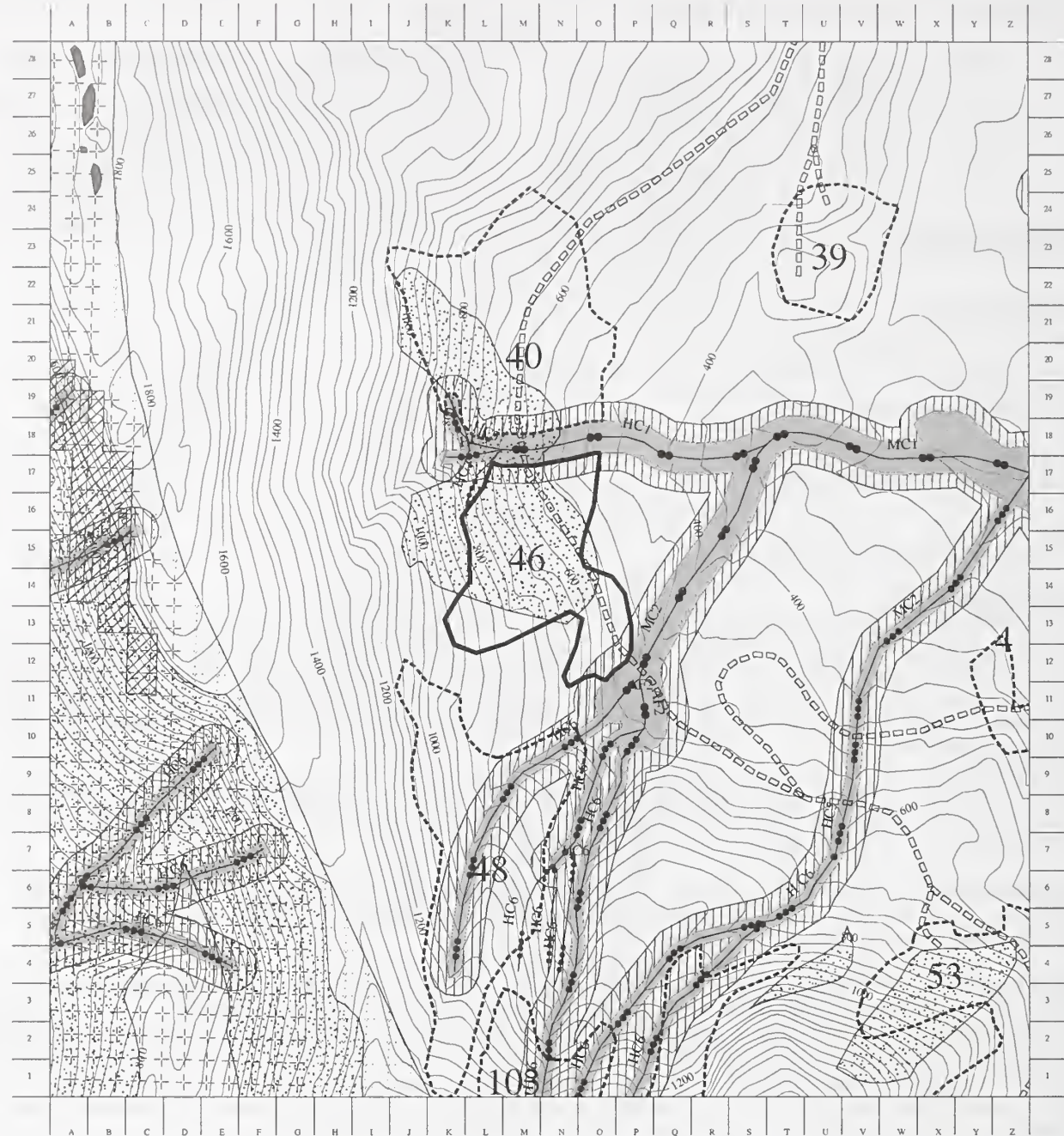
TIMBER:

This unit is designed for long-span cable yarding from the proposed road.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh). Interagency bald eagle MOU applies. Seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:46 (26 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_46.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	46	Planned Unit Acres:	26	Silvicultural Prescription:	EACCR
LUD:	TP			Quad:	KTNB6SE
		Primary WAA Number:	101	Photo:	198-63
		Logging Prescriptions:	short-span cable	Town/Range/Sect:	76S89E13
				Total Estimated Harvest Volume (CCF):	1,786

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II (TTRA) HC1 North: 100-foot Standard and Guideline or greater buffer

Class IV HC1 Northwest: Requires directional felling, partial, or full suspension.

Class II (TTRA) MC2 Southeast: 100-foot Standard and Guideline or greater buffer

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Overstory vegetation is dominated by western hemlock, with scattered spruce and western red cedar. The canopy has gaps, due to windthrown microsites. Understory is fairly sparse, dominated by 5-10% menziesia cover. Mistletoe is moderate in most western hemlock throughout entire unit. There are some areas of severe mistletoe infections. Some minor yellow cedar decline was found in one area. Windthrow hazard appears to be low to moderate throughout unit.

Desired Future Condition: Stand will be predominantly even aged with windfirm reserve clumps and scattered trees where possible. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure, scattered and/or clumped, throughout the areas of high value marten habitat within the unit. The reserve areas may be clumped along stream buffers and steep slope areas to obtain windfirmness. This prescription will regenerate a healthy stand with less defect.

SOILS:

No resource concerns were identified.

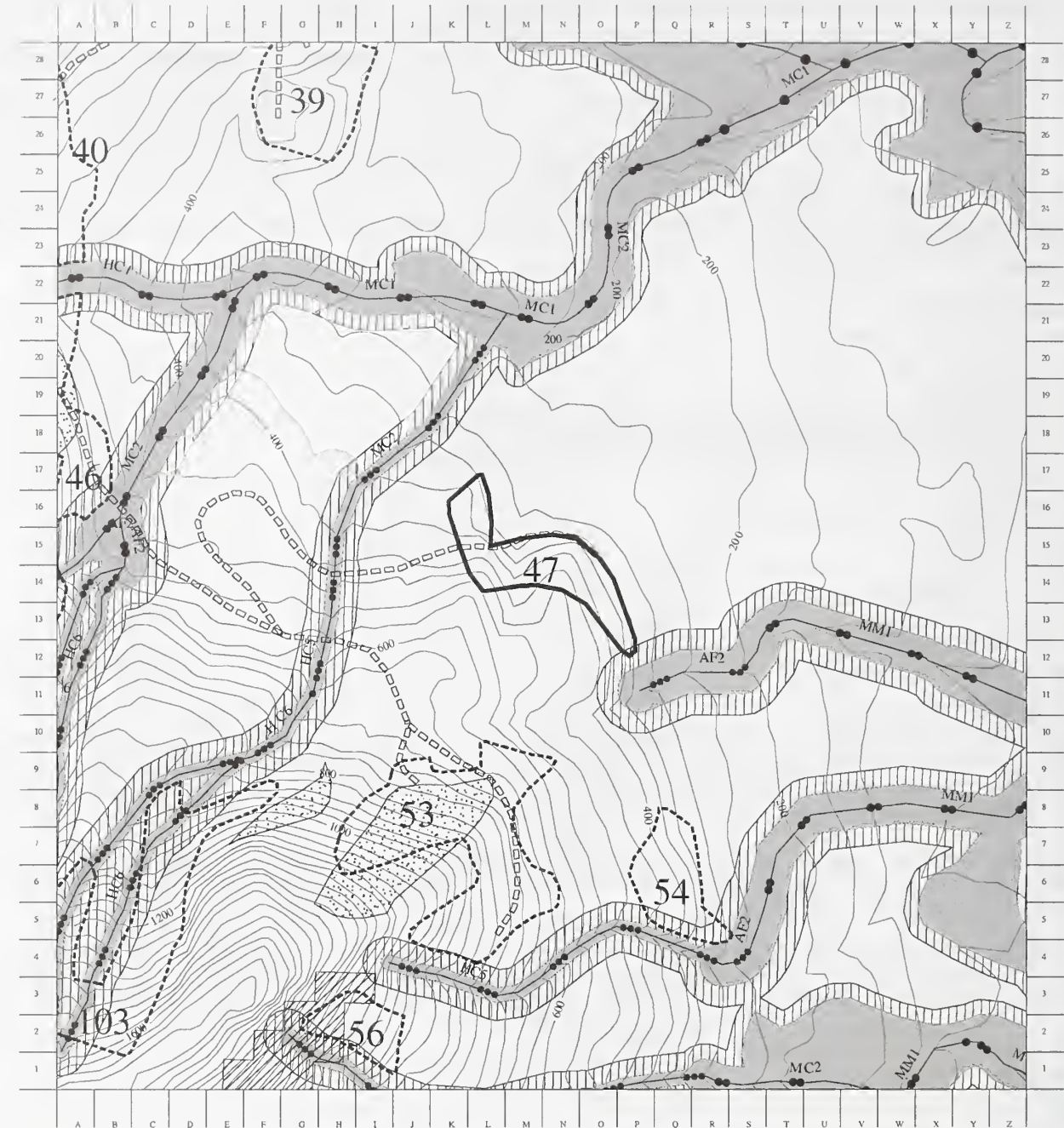
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:47 (11 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- - - Other ROD Units
- Proposed Roads

- ▨ Salt Water
- Lakes/Ponds
- ▨ Riparian Areas
- ▨ Encumbered NFS
- ▨ NON -NFS
- ⊕ Old Growth Reserves
- ▨ MM-Haz 4 Soils
- ▨ Slopes > 72%
- ▨ Windfirm Mgt. Areas
- ▨ Hi Value Marten Hab.
- ▨ Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grrodpl_47.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	47	Planned Unit Acres:	11	Silvicultural Prescription:	CC		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-102	Town/Range/Sect:	76S90E19
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):			625

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II AF2 Southeast: 140-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: This is a mixed cedar stand with areas of high defect and wind damage. The overstory is composed of western hemlock, western red cedar, and Alaska yellow cedar. The shrub layer consists of blueberry.

Desired Future Condition: Stand will be even-aged. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. This will reduce mistletoe and remove highly defected trees, maximize economic return, and minimize risk of windthrow, which is high within the unit. If possible, retain unmerchantable trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

No resource concerns were identified.

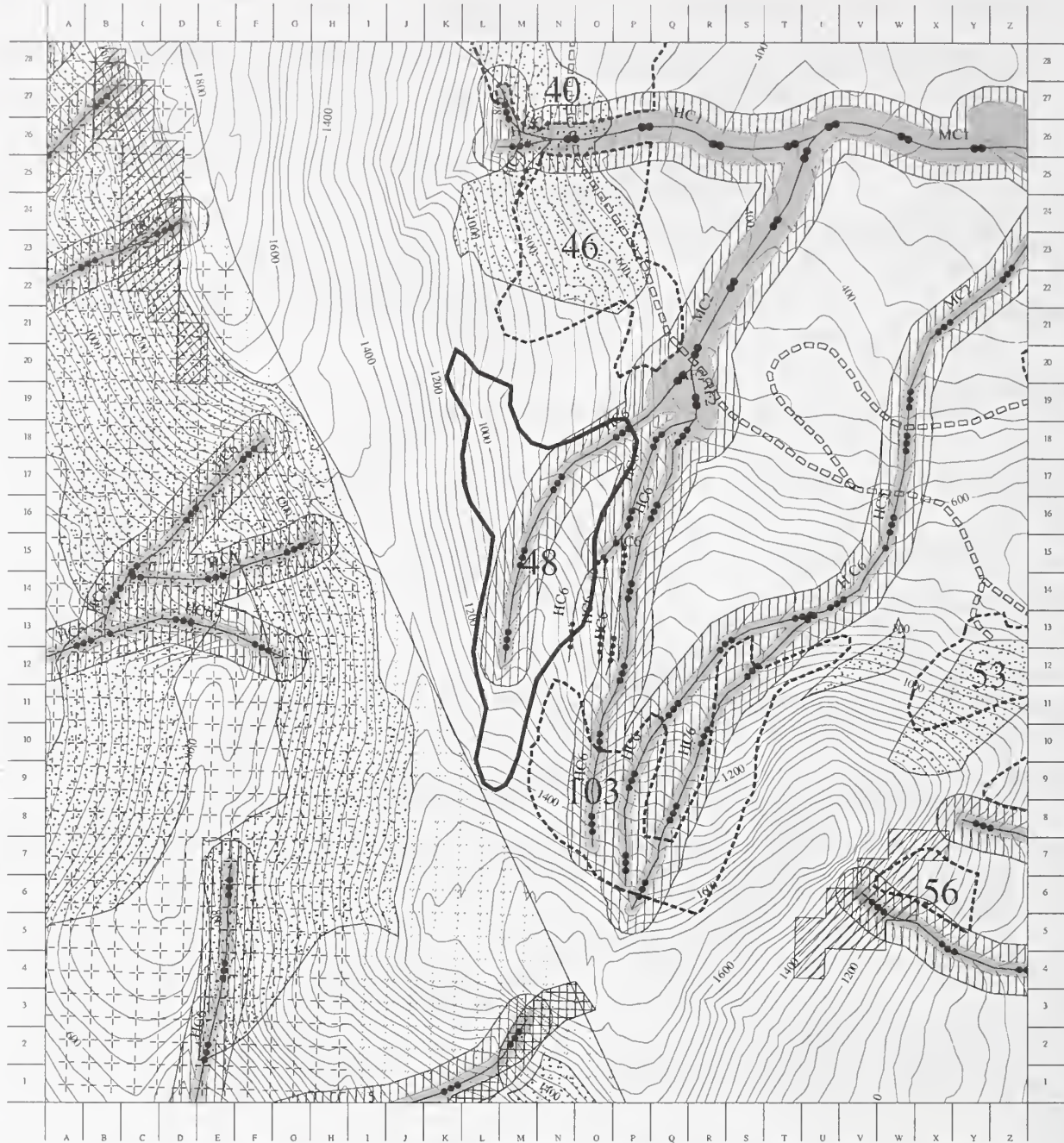
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:48 (37 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_48.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	48	Planned Unit Acres:	37	Silvicultural Prescription:	STS		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-61	Town/Range/Sect:	76S89E24
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):		1,128	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC6 center: Sideslope Standard and Guideline buffer required

Class III HC6 Northeast: Sideslope Standard and Guideline buffer required

Class IV HC6 East: Requires directional felling, partial, or full suspension.

Class II AF2 Northeast: 140-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit is a multi-cohort stand with a dying/decadent overstory of large western hemlock and Sitka spruce. The middle and understory are vigorous and dominated by western hemlock. Moderate to severe mistletoe infects the western hemlock. The dominant plant association is Sitka spruce/blueberry.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, removing approximately 50% basal area through individual tree marking. ~~Favor the dying/decadent and mistletoe infected trees as selection for removal. A mix of tree species will be left to maintain original species composition.~~ This prescription will address soil stability concerns.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that less than 2 acres of slopes greater than 72% are located in the northeastern corner of the unit near the Class III stream. The single-tree selection prescription will promote soil stability in this area (BMP 13.2).

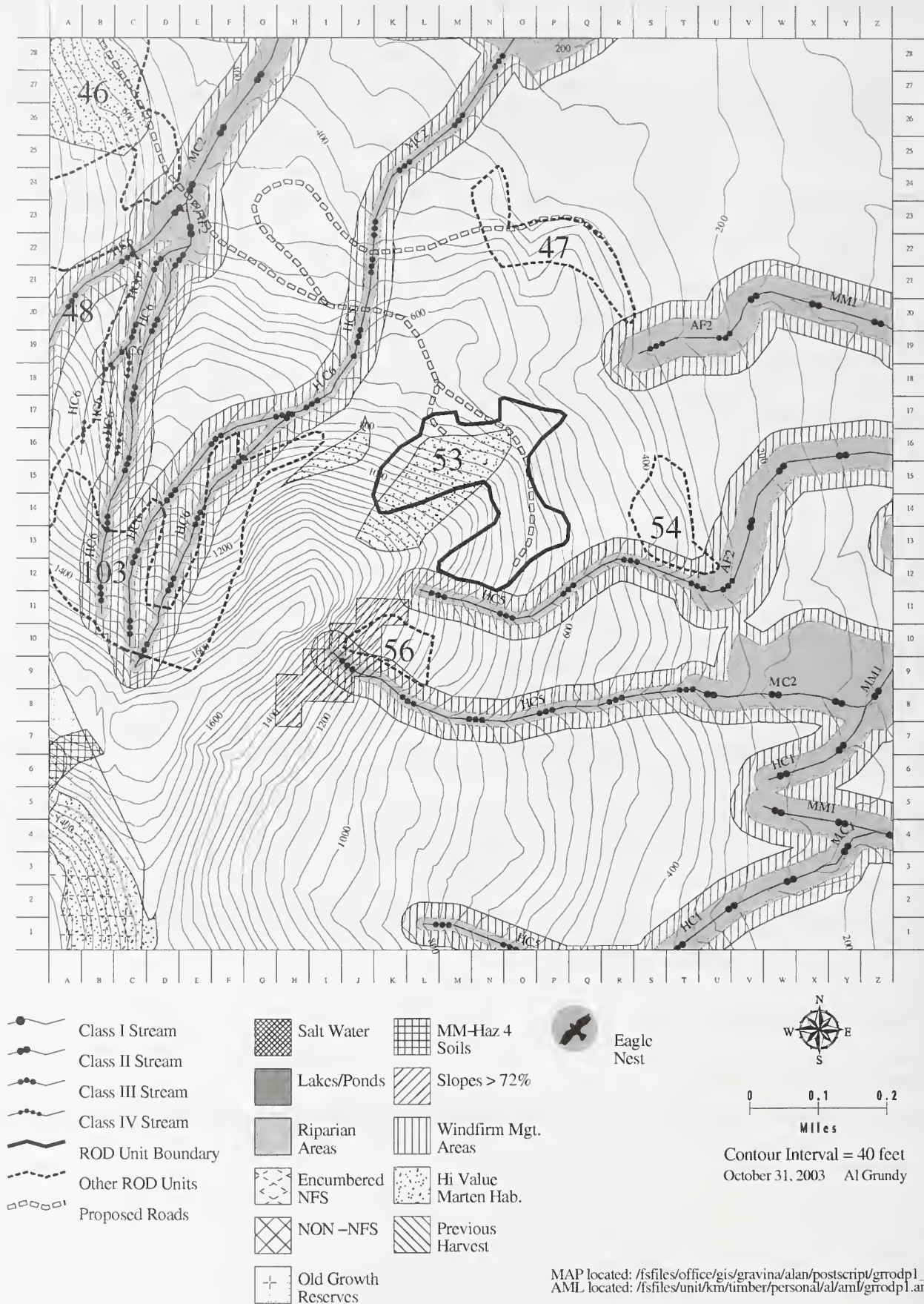
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:53 (25 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	53	Planned Unit Acres:	25	Silvicultural Prescription:	CC		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-18	Town/Range/Sect:	76S90E19
		Logging Prescriptions:	short-span cable	Total Estimated Harvest Volume (CCF):			1,539

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC5 South: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: This is a varied, highly wind-disturbed stand. The higher elevation section in the southeast is an almost pure, two-aged western hemlock stand. The rest of the unit transitions from low-productivity, mixed conifer forest type to western hemlock-western red cedar forest type. The overstory is composed of western hemlock, Sitka spruce, western red cedar, mountain hemlock, and Alaska yellow cedar. The shrub layer consists of blueberry, salal, and menziesia. Windthrow potential is estimated to be high.

Desired Future Condition: Stand will be even aged with some reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. There is an area of high value marten habitat within the unit. Maintain 10-20% of the stand structure in this area. ~~This prescription will reduce mistletoe, maximize economic return, and minimize risk of windthrow.~~ The reserve areas may be clumped along stream buffers and steep slope areas to obtain windfirmness. If possible, retain unmerchantable trees throughout the unit, particularly snags and near snags of large diameter.

SOILS:

Slopes Greater than 72%: No slopes greater than 72% will be harvested.

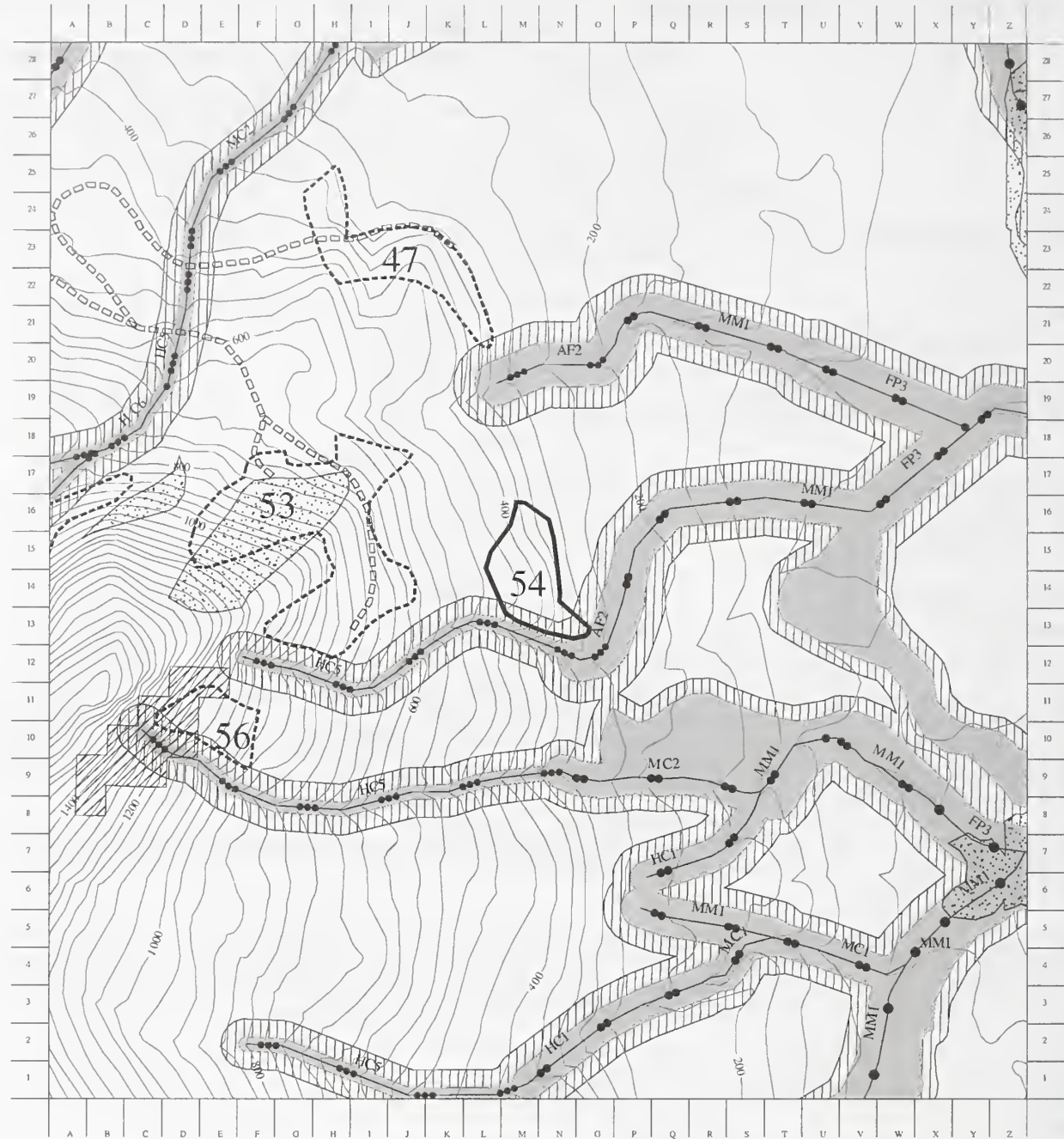
TIMBER:

This unit is designed for short-span cable yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Gravina Record of Decision Unit:54 (7 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grodp1_54.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grodp1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	54	Planned Unit Acres:	7	Silvicultural Prescription:	CC		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-103	Town/Range/Sect:	76S90E19
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			391

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III AF2 Southeast: 140-foot Standard and Guideline or greater buffer required

Class III HC5 Southwest: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Unit is moderately productive, with a dominant western red cedar overstory that is highly defected. Stand structure displays old-growth features. Windthrow was consistently high throughout the entire unit. Advanced regeneration was abundant and adequate. A Pacific yew tree was found in the northern section of the unit.

Desired Future Condition: Stand will be even aged. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. This will reduce mistletoe and highly defected stems, maximize economic return, and minimize risk of windthrow. Attempt to feather unit edges to minimize risk of windthrow along unit edge. Flag and document any yew trees found during layout. Implement a site-specific silvicultural prescription that will maintain the Pacific yew's regeneration capabilities on site.

SOILS:

No resource concerns were identified.

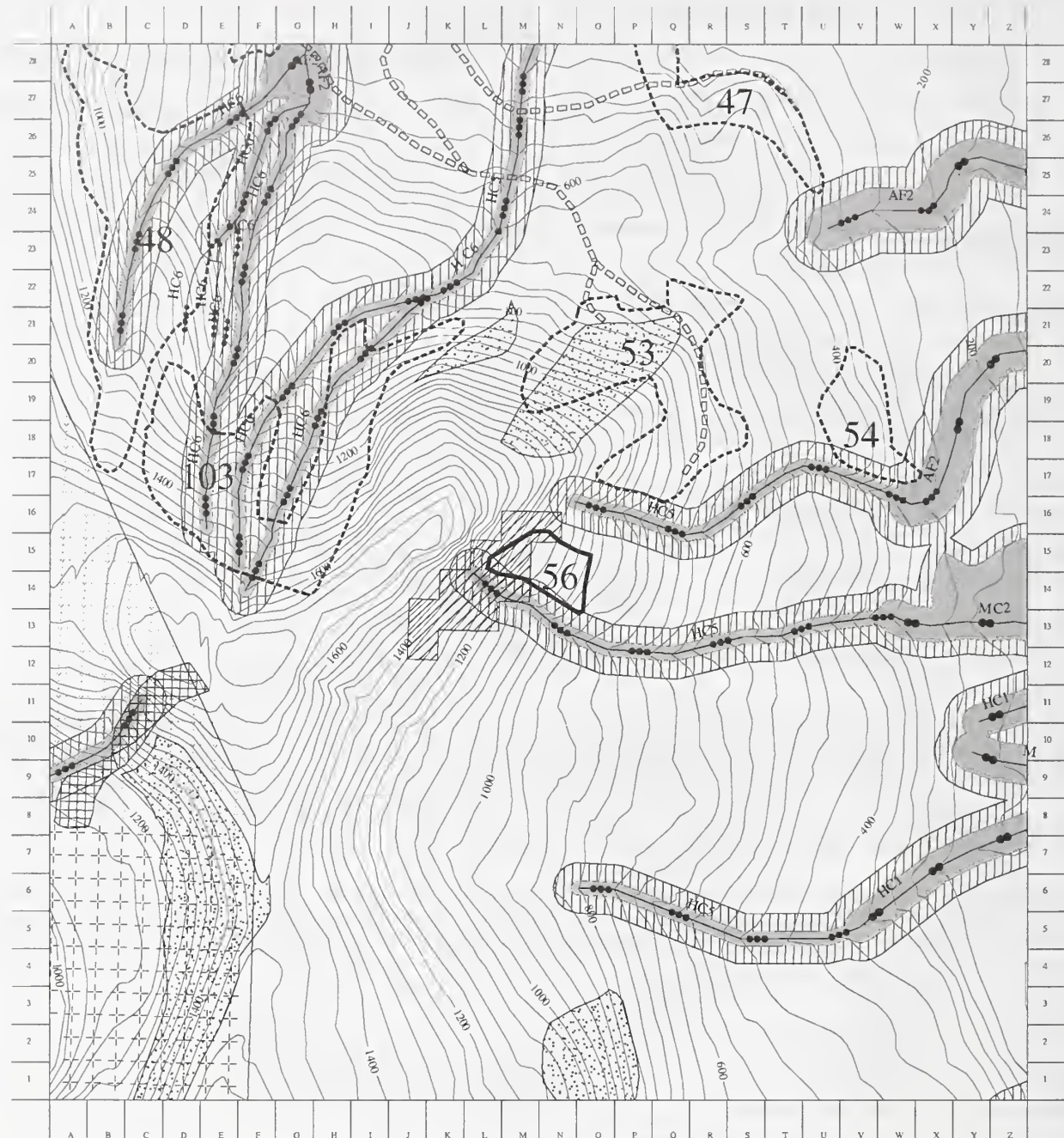
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:56 (5 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_56.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	56	Planned Acres:	5	Silvicultural Prescription:	CC
LUD:	TP			Quad:	KTNB6SE
				VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-102
				Town/Range/Sect:	76S90E19
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):	249

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC5 South: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: This is a high-elevation, two-aged, medium-sized (15-25" dbh) western hemlock stand with scattered spruce in the overstory. In the understory, a thick, 5-10 foot tall western hemlock layer is interspersed with areas of stem exclusion that have a bare understory. There is minor to moderate mistletoe in most hemlock. Wind disturbance has played a major role in stand development. Windthrow potential is estimated to be high.

Desired Future Condition: Stand will be even aged. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. This will reduce mistletoe, maximize economic return, regenerate a healthy stand with less defect, and minimize risk of windthrow.

SOILS:

Slopes Greater than 72%: The western unit boundary will be placed to exclude all slopes greater than 72% (BMPs 13.2, 13.5).

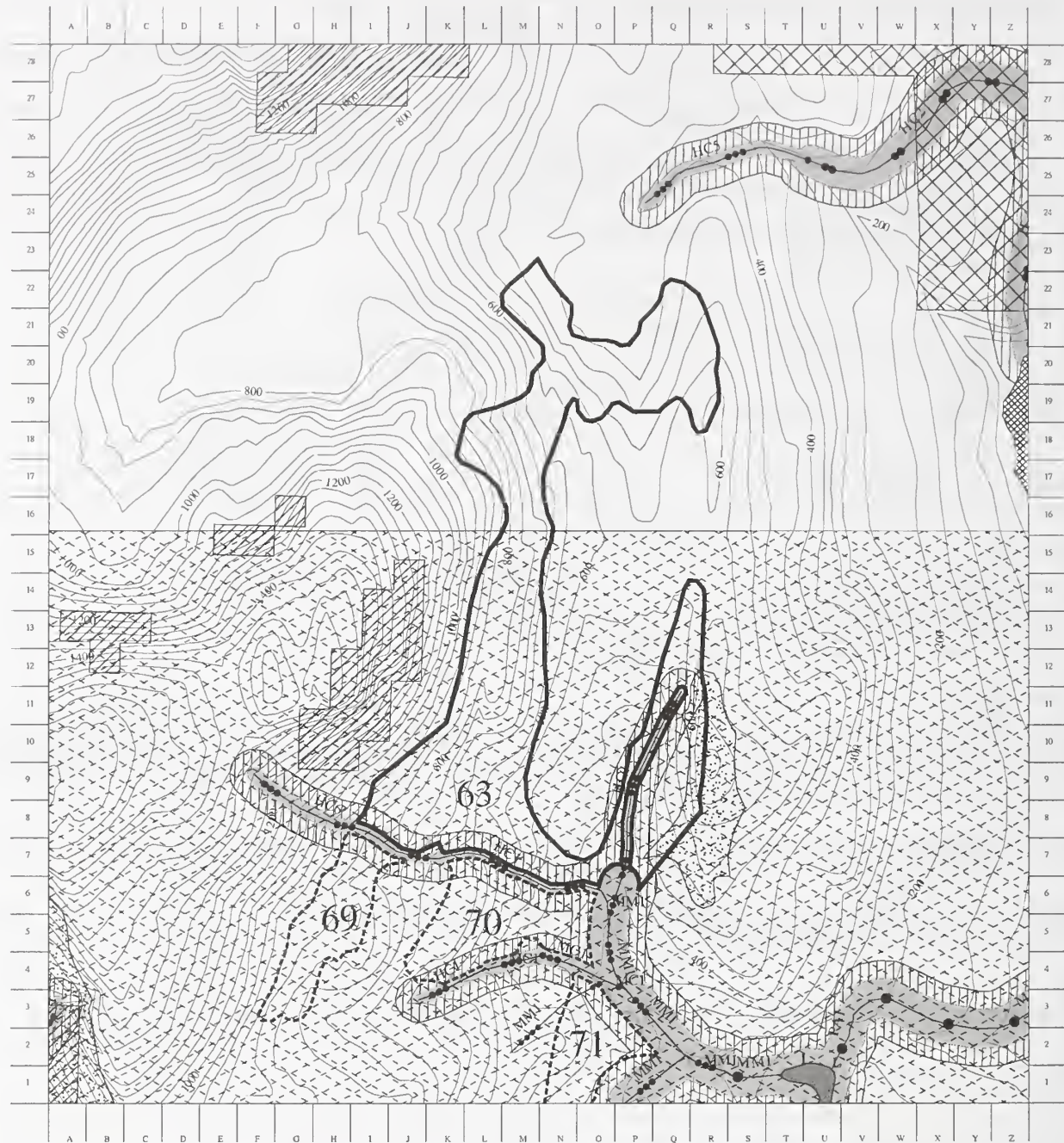
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:63 (79 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_63.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	63	Planned Unit Acres:	79	Silvicultural Prescription:	EACCR		
LUD:	TP			Quad:	KTNA6NE	VCU Number:	76301,76401
		Primary WAA Number:	101	Photo:	198-123	Town/Range/Sect:	76S90E27
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			4,124

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC1 Southeast: Sideslope Standard and Guideline buffer required

Class III HC1/HC6 South: Sideslope Standard and Guideline buffer required

Class III MM1 Southeast: 120-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

Encumbered lands (overselection by Cape Fox)

RECREATION/SCENERY:

This unit highly visible from Mountain Point and along south Tongass Highway as a long, narrow strip. Try to concentrate reserve trees in a manner that will best visually break up this long clearing.

SILVICULTURE:

Vegetation: There were two dominant forest types found within unit: pure, decadent western hemlock with high defect, severe mistletoe and sparse understory and mixed conifer with heavy salal cover. Canopy cover varies from closed canopy within the western hemlock forest to very open in the mixed conifer areas. Windthrow hazard is estimated to be low overall but there are scattered, isolated areas of heavy windthrow.

Desired Future Condition: Stand will be predominantly even aged with windfirm reserve clumps, stream buffers and scattered trees where possible. Natural regeneration may be inhibited in areas of heavy salal cover. Monitor regeneration closely. Future treatments may include planting in areas of salal cover and pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave 10-20% of the stand structure in the areas of high value marten habitat. Reserve areas will also be established in areas of low-productivity forest, stream buffers, or steep slopes throughout the unit to reduce total opening size, as this unit is adjacent to other units. These reserve areas may be clumped to obtain windfirmness.

To minimize the visual effect of the long backline, two scenarios are being considered and one will be applied after further on-the-ground analysis is conducted by layout foresters and the landscape architect. Scenario A would implement an irregular upper backline, lowering it down to the 760' contour line in several places along the entire upper boundary. Scenario B would use individual tree marking guidelines to retain 40% structure to the 840' contour line and 20% structure retention to the 760' contour line. These two scenarios should break up the long shape of this unit and improve the visual impact from the Mountain Point area and South Tongass Highway.

SOILS:

No resource concerns were identified.

TIMBER:

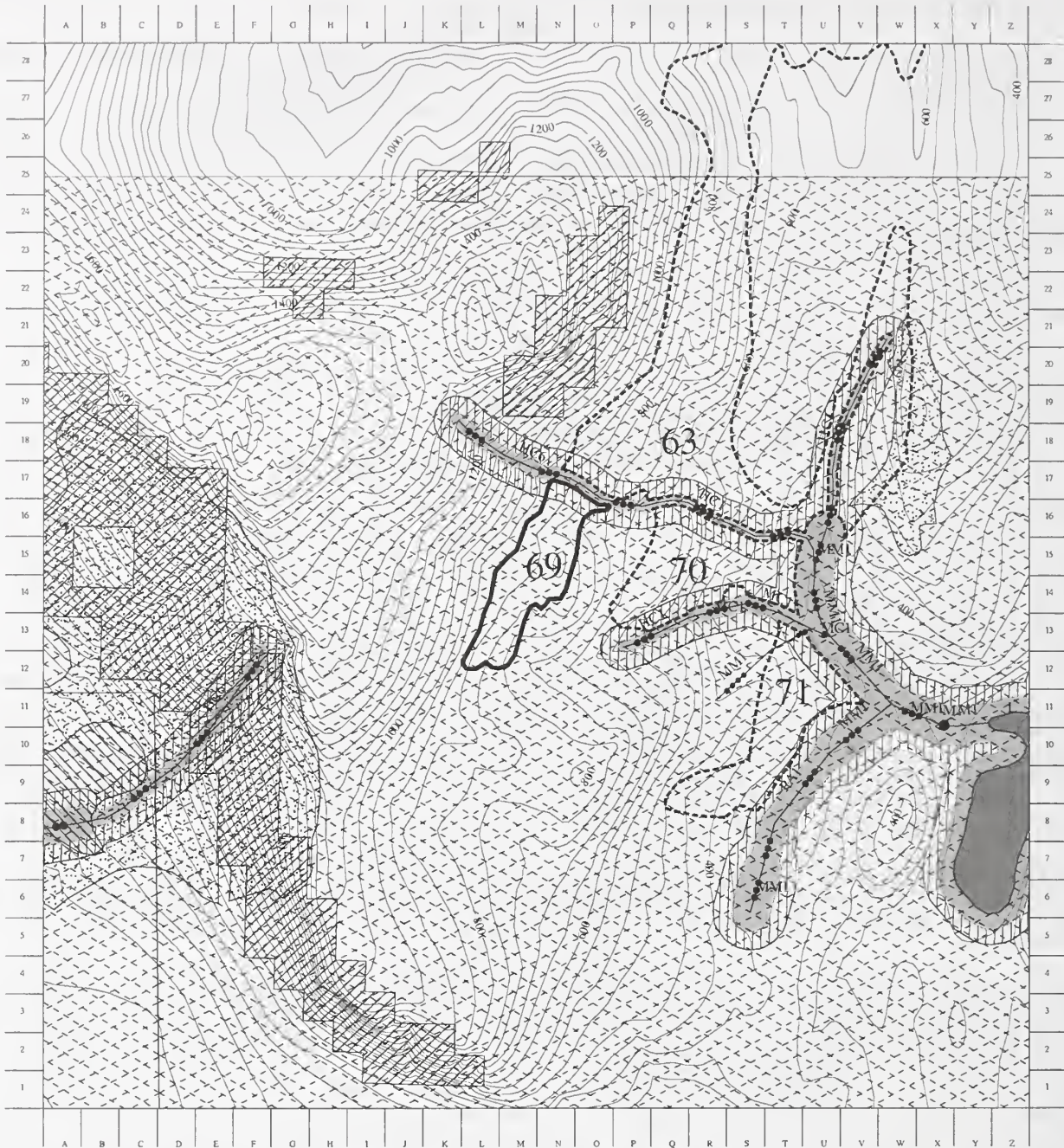
This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Unit is within 1/2 mile of known eagle nest and will be helicopter yarded. Interagency Bald Eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:69 (10 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /f:/files/office/gis/gravina/alan/postscript/grodpl_69.eps
AML located: /f:/files/unit/km/timber/personal/al/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	69	Planned Unit Acres:	10	Silvicultural Prescription:	CC		
LUD:	TP			Quad:	KTNA6NE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-123	Town/Range/Sect:	76S90E34
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):		528	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC6 North: Sideslope Standard and Guideline buffer required.

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Overstory is dominated by western hemlock with occasional spruce and red cedar. Understory consists of menziesia and devil's club. There are moderate severities of mistletoe in most western hemlock.

Desired Future Condition: Stand will be even aged. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription. This prescription will reduce mistletoe, maximize economic return, regenerate a healthy stand with less defect, and minimize risk of windthrow.

SOILS:

No resource concerns were identified.

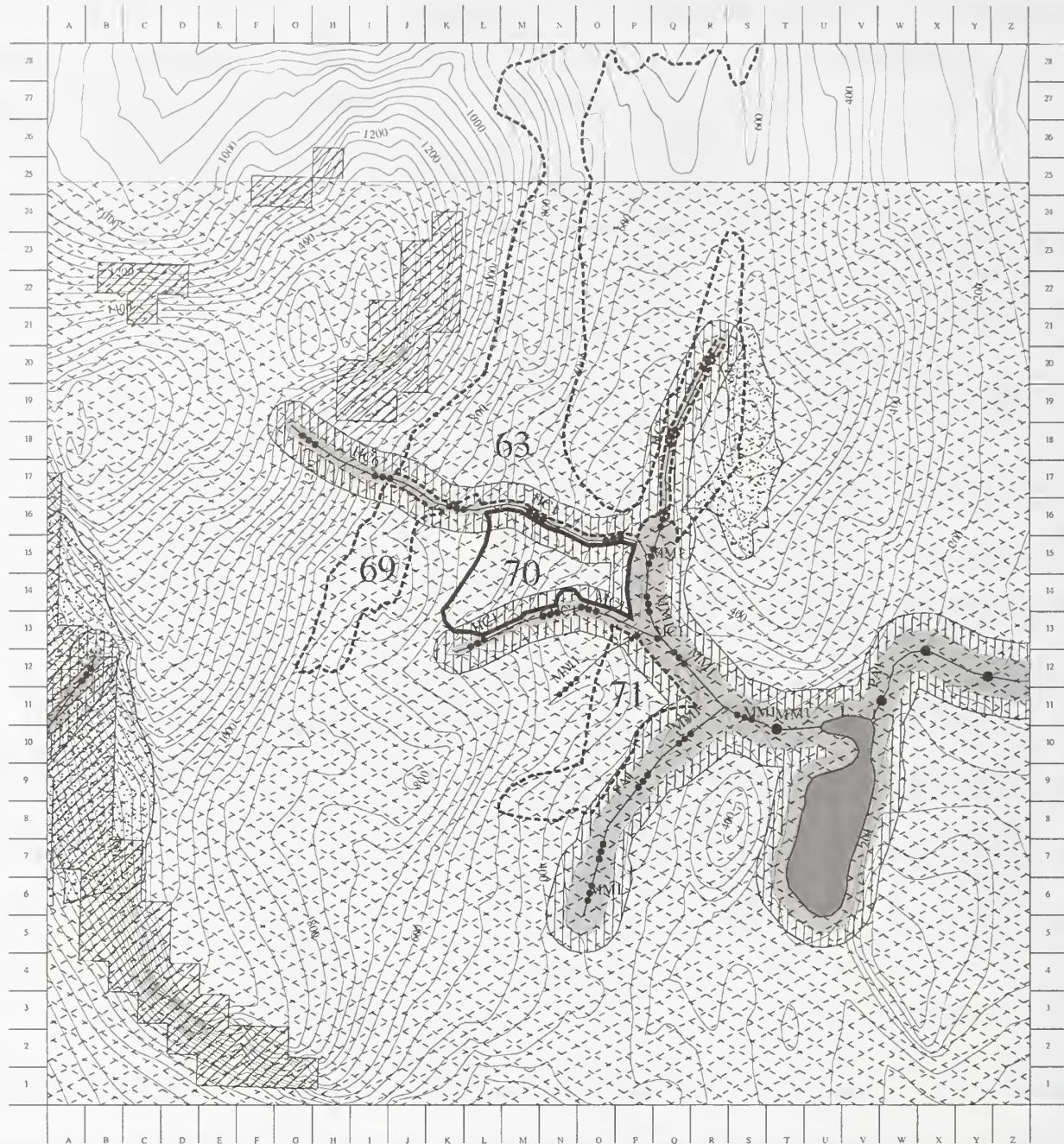
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:70 (14 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_70.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	70	Planned Unit Acres:	14	Silvicultural Prescription:	EACCR		
LUD:	TP			Quad:	KTNA6NE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-123	Town/Range/Sect:	76S90E34
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			686

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC1 North: Sideslope Standard and Guideline buffer required
 Class III HC1/MC1 South: Sideslope Standard and Guideline buffer required
 Class III MM1 East: 120-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: There were two dominant forest types found within unit: pure, decadent western hemlock with high defect, severe mistletoe and sparse understory and mixed conifer with heavy salal cover. Canopy cover varies from closed canopy within the western hemlock forest to very open in the mixed conifer areas. Windthrow hazard is estimated to be low overall.

Desired Future Condition: Stand will be predominantly even aged with windfirm reserve clumps and scattered trees where possible. Natural regeneration may be inhibited in areas of heavy salal cover. Monitor regeneration closely. Future treatments may include planting in areas of salal cover and pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave areas of low-productivity forest, stream buffers, or steep slopes throughout the unit in a way to reduce total opening size, as this unit borders other units. If possible, retain unmerchantable trees throughout the unit, particularly snags and near snags of large diameter. The helicopter yarding system should enable protection of the other cohorts in the understory.

SOILS:

No resource concerns were identified.

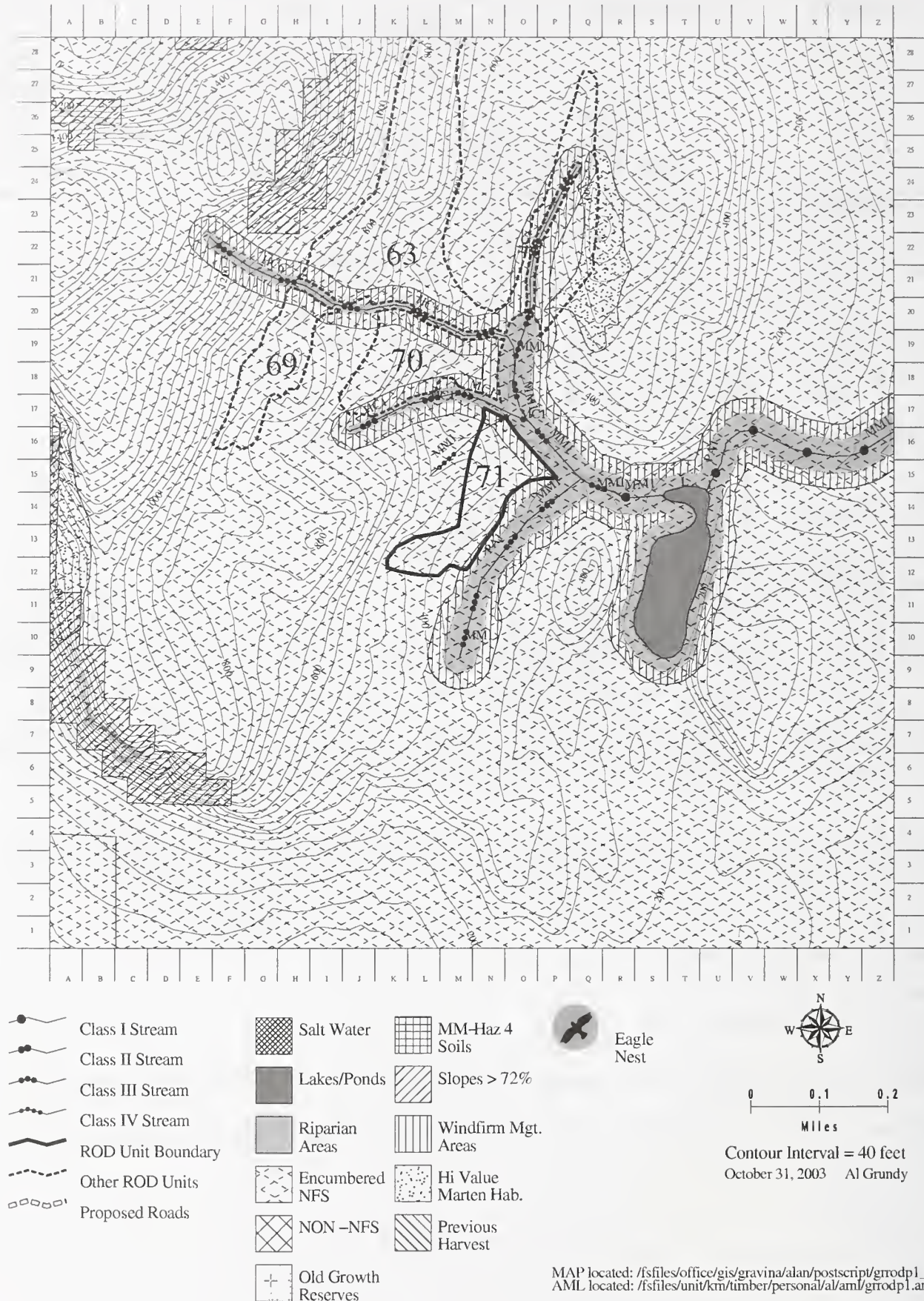
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:71 (12 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	71	Planned Unit Acres:	12	Silvicultural Prescription:	EACCR		
LUD:	TP			Quad:	KTNA6NE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-122	Town/Range/Sect:	76S90E35
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			629

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class IV MM1 North: Requires directional felling, partial, or full suspension.

Class III MC1 North: Sideslope Standard and Guideline buffer required.

Class III MM1 East: 120-foot Standard and Guideline or greater buffer required.

Class III PA1/MM1 Southeast: 120-foot Standard and Guideline no-cut buffer required.

GEOLOGY:

No resource concerns were identified

LANDS:

No resource concerns were identified

RECREATION/SCENERY:

No resource concerns were identified

SILVICULTURE:

Vegetation: There were two dominant forest types found within unit: pure, decadent western hemlock with high defect, severe mistletoe and sparse understory and mixed conifer with heavy salal cover. Canopy cover varies from closed canopy within the western hemlock forest to very open in the mixed conifer areas. Windthrow hazard is estimated to be low overall but there are scattered, isolated areas of heavy windthrow.

Desired Future Condition: Stand will be predominantly even aged with windfirm reserve clumps and scattered trees where possible. Natural regeneration may be inhibited in areas of heavy salal cover. Monitor regeneration closely. Future treatments may include planting in areas of salal cover and pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply an even-aged clearcut with reserves prescription. Leave areas of low-productivity forest, stream buffers, or steep slopes throughout the unit in a way as to reduce total opening size as this unit borders other units. If possible, retain unmerchantable trees throughout the unit, particularly snags and near snags of large diameter. The helicopter yarding system should enable protection of the other cohorts in the understory.

SOILS:

No resource concerns were identified.

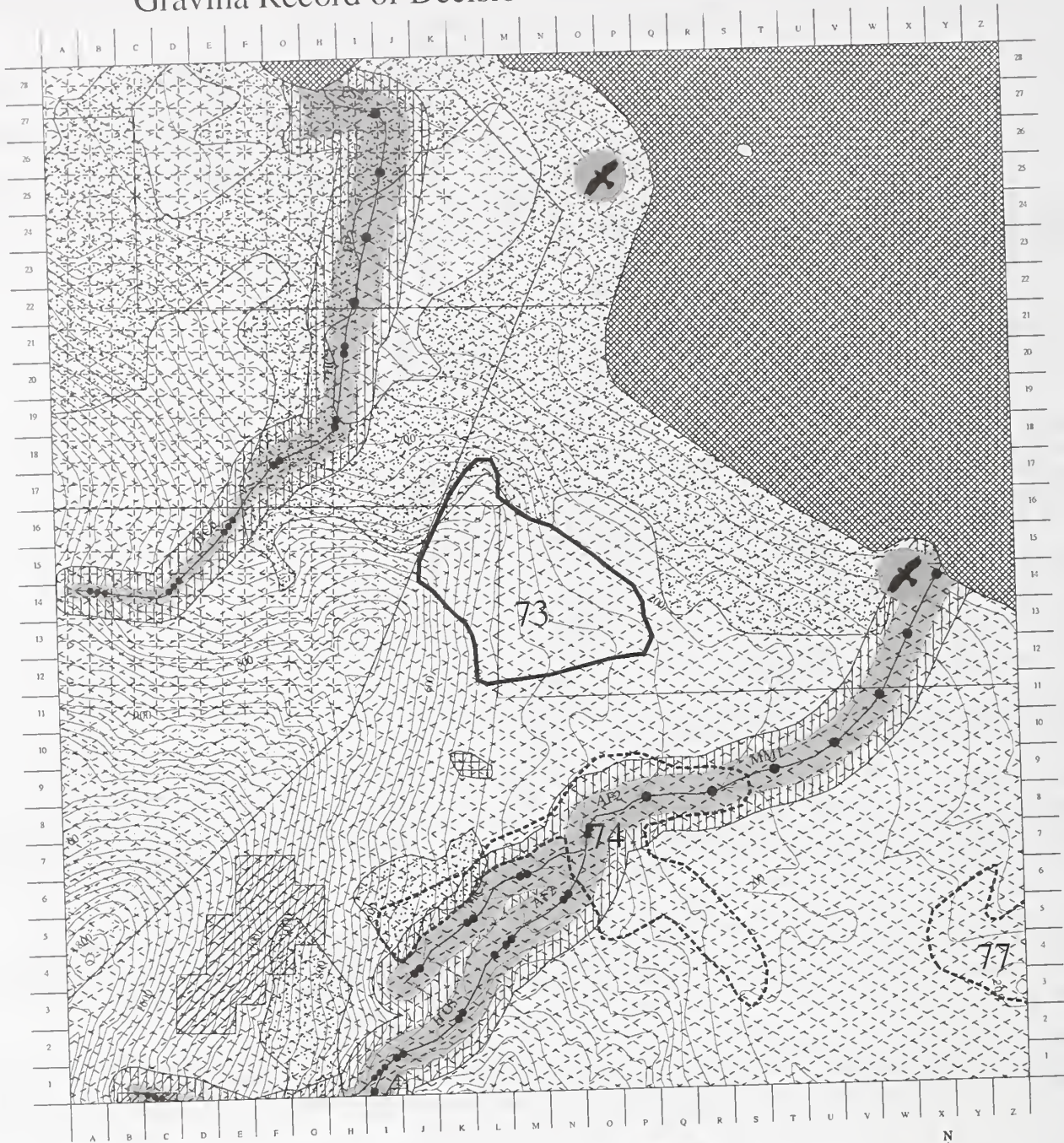
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:73 (31 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: //sfiles/office/gis/gravina/alan/postscript/grodpl_73.eps
AML located: //sfiles/unit/km/timber/personal/al/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	73	Planned Unit Acres:	31	Silvicultural Prescription:	GS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	298-21	Town/Range/Sect:	77S91E8
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			901

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

Encumbered lands (overselection by Cape Fox)

RECREATION/SCENERY:

In the western portion of unit on the steeper slopes that face east, plan 2-3 acre scattered openings or narrow corridors. The openings can be larger on flatter eastern portion of the unit. The goal is to meet Forest Plan adopted VQO of Partial Retention objective on this middleground slope. 50% retention is recommended.

SILVICULTURE:

Vegetation: Topography is irregular throughout the unit with knobs, spur ridges, benches and several different aspects. Overstory is a mix of western hemlock, Sitka spruce, and western red cedar. Two Pacific yew trees were found within the unit. Wind disturbance occurs as small-scale, gap phase dynamics. Understory is dominated by menziesia and skunk cabbage.

Desired Future Condition: Future stand will be a mosaic of small areas with different cohorts resulting in an uneven-aged stand. Overall stand will be uneven-aged. 50% of the stand is being retained to meet visual quality objectives and to provide structure. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a group selection prescription, retaining approximately 50% to meet visual quality objectives and to provide structure. Harvest individual trees and/or groups up to 2 acres scattered throughout unit, concentrating retention in areas that are visible from saltwater and more susceptible to windthrow potential. A mix of tree species will be left to maintain original species composition. Flag and document any yew trees found during layout. Implement a site-specific silvicultural prescription that will maintain the Pacific yew's regeneration capabilities on site.

SOILS:

No resource concerns were identified.

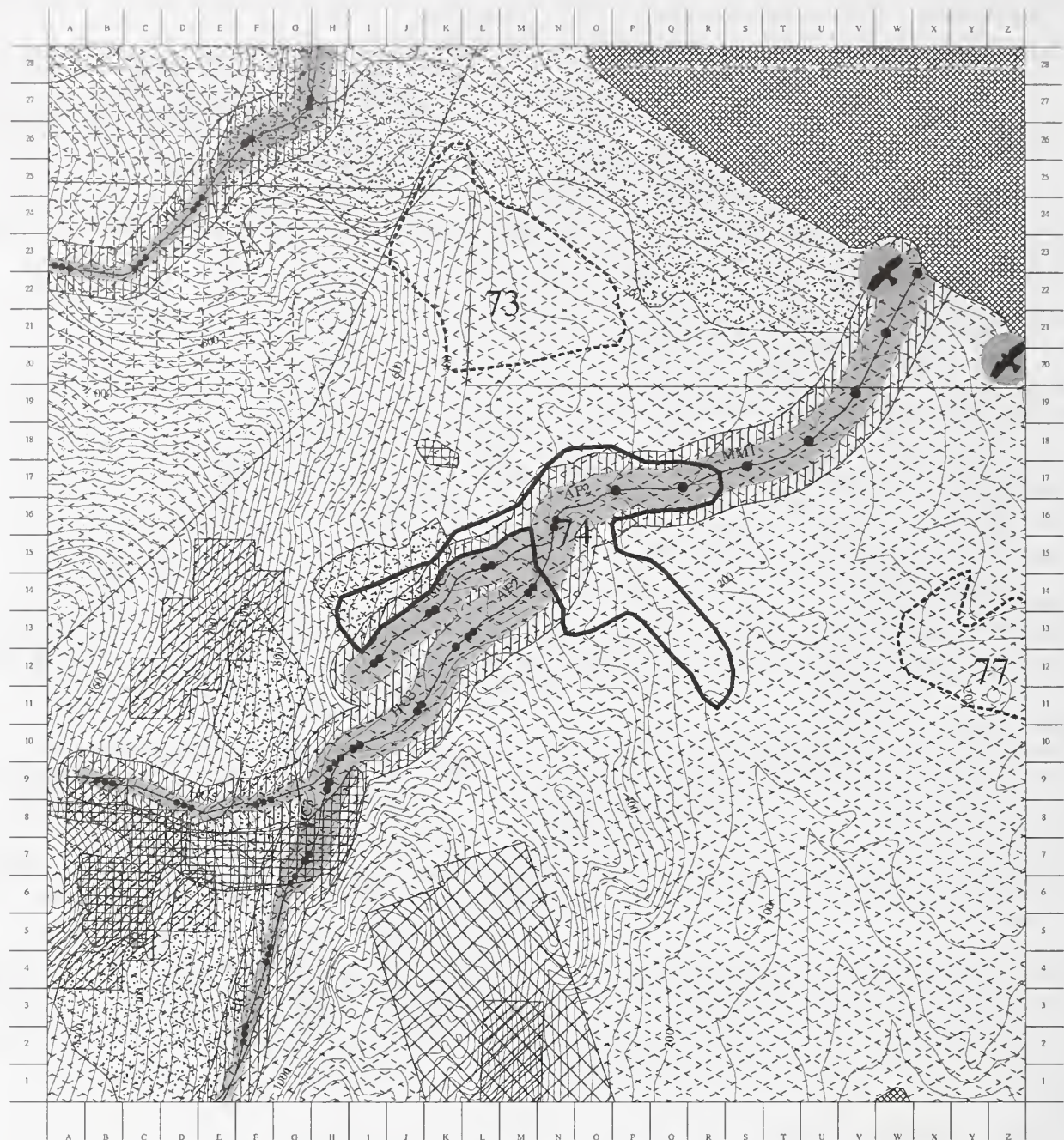
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Unit is within 1/2 mile of known eagle nest and will be helicopter yarded. Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:74 (33 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/gmrodpl_74.cps
AML located: /fsfiles/unit/km/timber/personal/al/aml/gmrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	74	Planned Unit Acres:	33	Silvicultural Prescription:	STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76301,76501
		Primary WAA Number:	101	Photo:	298-21	Town/Range/Sect:	77S91E8
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):		1,083	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class I (TTRA) MM1 Northeast: 120-foot Standard and Guideline or greater buffer required.

Class II (TTRA) MC2 East: 100-foot Standard and Guideline or greater buffer required.

Class II (TTRA) AF2 Southcentral: 140-foot Standard and Guideline or greater buffer required.

GEOLOGY:

This unit was not visited by the Forest Geologist; it was visited by other resource specialists and no karst resource concerns were noted. The Forest Geologist mapped similar strata near Bostwick Inlet, adjacent and immediately east of this unit, in summer 2003: although the underlying geologic strata contained minor thin-bedded carbonaceous limestone, no karst development was noted, and the strata primarily contained carbonaceous shale, thin limestone debris flows, sandstone, and conglomerate. Based on mapping of Berg (1973) and field reconnaissance during summer 2003, it was determined that karst development was unlikely in this unit. Because a small portion of the strata is calcareous, a designation of low vulnerability was given to this unit.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Approximately 25 percent retention needed to meet visual objective.

SILVICULTURE:

Vegetation: Overstory is dominated by western red cedar and western hemlock with a red alder component. Severe mistletoe is present in most western hemlock. Understory is dominated by blueberry, skunk cabbage, and salal. Topography is irregular with spur ridges and draws.

Desired Future Condition: Stand will have multiple canopy layers. Overall stand will be uneven aged. 50% of the stand is being retained to meet visual quality objectives, to buffer streams and to provide structure. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, retaining approximately 50% basal area through individual tree marking. Ensure stream buffer is windfirm. Favor mistletoe infected trees as selection for removal. Concentrate heavier removal in the lower reaches of the unit that are not visible from salt water. A mix of tree species will be left to maintain original species composition.

SOILS:

No resource concerns were identified.

TIMBER:

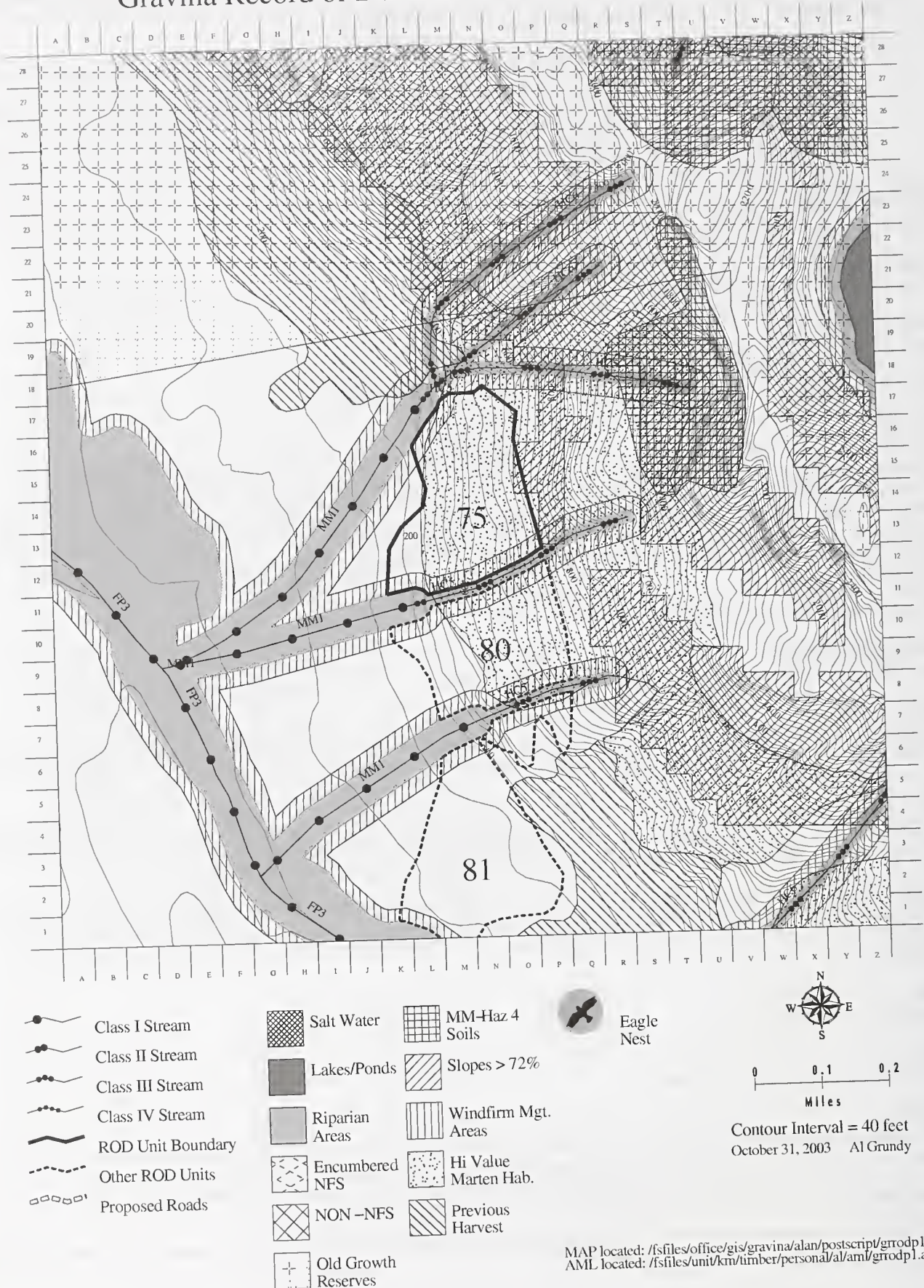
This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Unit is within 1/2 mile of known eagle nest and will be helicopter yarded. Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:75 (29 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	75	Planned Unit Acres:	29	Silvicultural Prescription:	STS
LUD:	SV			Quad:	KTNA6NE
				VCU Number:	76201
		Primary WAA Number:	101	Photo:	298-94
				Town/Range/Sect:	77S90E11
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):	1,165

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class I (TTRA) MM1 Northwest: 100-foot Standard and Guideline or greater buffer required

Class I (TTRA) MM1 Southwest: 120-foot Standard and Guideline or greater buffer required

Class III (TTRA) HC5 North: Sideslope Standard and Guideline buffer required

Class III (TTRA) HC5 South: Sideslope Standard and Guideline buffer required

GEOLOGY:

This unit was not visited by the Forest Geologist; it was visited by other resource specialists and no karst resource concerns were noted. The Forest Geologist mapped similar strata near Phocena and Nehenta Bay, adjacent and immediately west of this unit, in summer 2003: although the underlying geologic strata contained minor thin-bedded carbonaceous limestone, no karst development was noted, and the strata primarily contained carbonaceous shale, thin limestone debris flows, and sandstone. Based on mapping of Berg (1973), field reconnaissance during summer 2003, and karst surveys of Unit 89, it was determined that karst development was unlikely in this unit. Because a small portion of the strata is calcareous, a designation of low vulnerability was given to this unit.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 2 miles of the Phocena Bay cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic near Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Visual: This unit is in a Scenic Viewshed LUD seen from Clarence Strait cruise ship route. On steeper slopes cut 2-3 acre patches. Openings can be slightly larger on more moderate slopes. Look to blend these openings with natural openings or patterns in forest cover if any. Remove no more than about 50% of stand. Objective is Forest Plan VQO of partial retention.

SILVICULTURE:

Vegetation: This unit is western hemlock dominated with scattered Sitka spruce. Western red cedar is more common along the lower, western edge. Most of the red cedar is very large and cull. Mistletoe infection is nearly nonexistent. Shrub/forb cover is light, with the exception of menziesia, which comprises 50% of the understory cover in the lower reaches of the unit.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, retaining approximately 50% basal area either through individual tree marking or designation by description. Place in reserve approximately 2 acres of slopes greater than 72% along the eastern edge of the unit. A mix of tree species will be left to maintain original species composition.

SOILS:

Slopes Greater than 72%: There are slopes greater than 72% along the eastern unit boundary. These slopes have been reserved from harvest (BMP 13.2, 13.5).

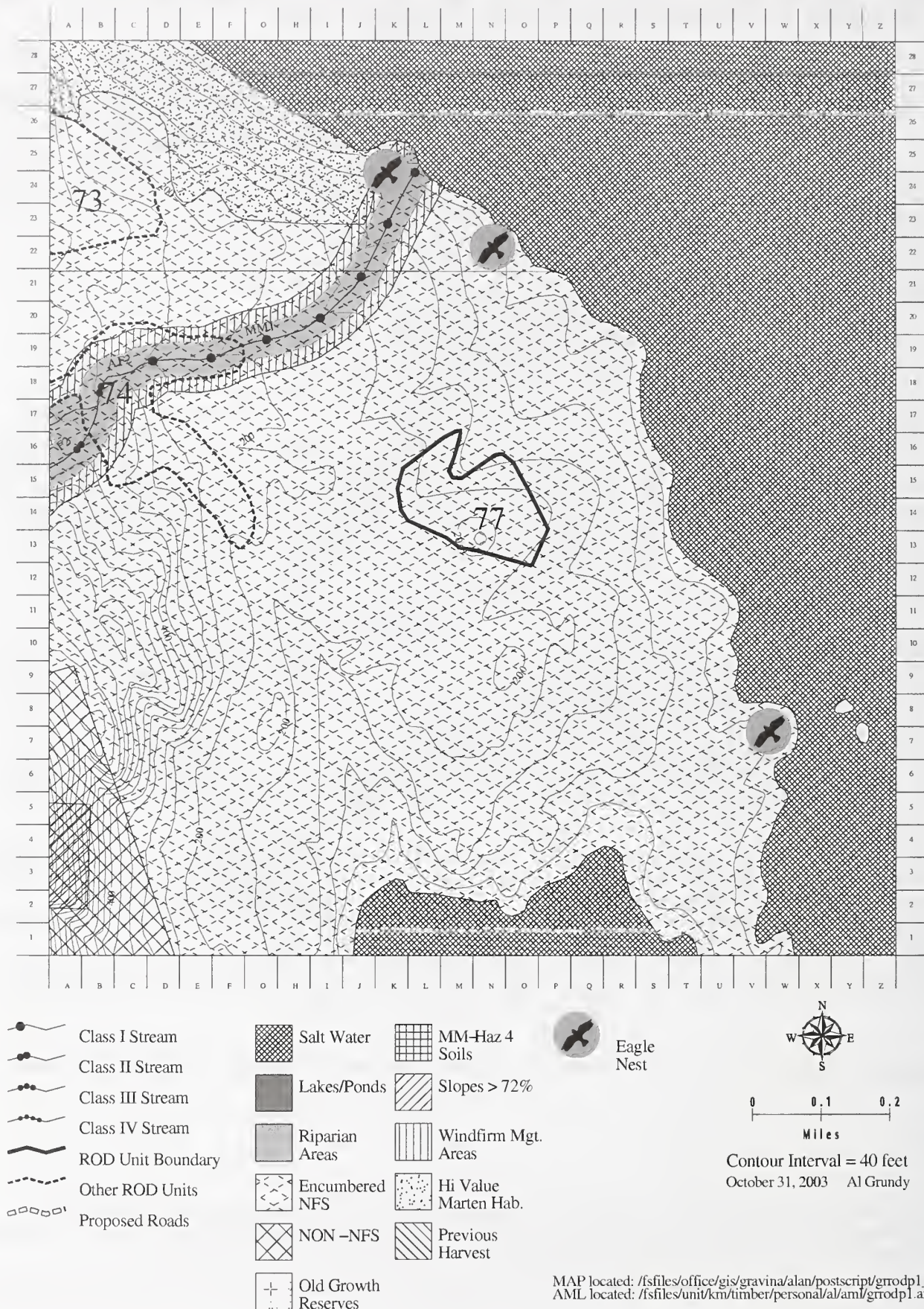
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh). Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:77 (16 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	77	Planned Unit Acres:	16	Silvicultural Prescription:	2ACCR		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	298-22	Town/Range/Sect:	77S91E17
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):		572	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

This unit was not visited by the Forest Geologist; it was visited by other resource specialists and no karst resource concerns were noted. The Forest Geologist mapped similar strata near Bostwick Inlet, adjacent and immediately east of this unit, in summer 2003: although the underlying geologic strata contained minor thin-bedded carbonaceous limestone, no karst development was noted, and the strata primarily contained carbonaceous shale, thin limestone debris flows, sandstone, and conglomerate. Based on mapping of Berg (1973) and field reconnaissance during summer 2003, it was determined that karst development was unlikely in this unit. Because a small portion of the strata is calcareous, a designation of low vulnerability was given to this unit.

LANDS:

Encumbered lands (overselection by Cape Fox)

RECREATION/SCENERY:

Since unit is on very gently rolling terrain, it is only slightly visible from Nichols Passage. 25-40% retention will be adequate to minimize impacts.

SILVICULTURE:

Vegetation: Overstory is dominated by western red cedar and western hemlock with a Sitka spruce and red alder component present. Severe mistletoe is present in most western hemlock. Topography is irregular with rolling hills and drainages.

Desired Future Condition: Stand will be managed as two-aged with windfirm reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity

Treatment: Apply a two-aged clearcut with reserves prescription. Retain trees either singly, in clumps, or in strips in a way so that the overall crown competition factor is 30 or greater. Concentrate the larger openings in the lower reaches where visuals are less of a concern. Favor mistletoe infected trees for selection for removal. Retain at least 2-3 western red cedar per acre to ensure retention of cedar as a species component. There will be approximately 40% basal area of the stand retained to accomplish the objective. T2

SOILS:

No resource concerns were identified.

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Unit is within 1/2 mile of known eagle nest and will be helicopter yarded. Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:80 (23 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_80.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	80	Planned Unit Acres:	23	Silvicultural Prescription:	STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76201
		Primary WAA Number:	101	Photo:	298-94	Town/Range/Sect:	77S90E14
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			884

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class I (TTRA) MM1 Northeast: 130-foot Standard and Guideline or greater buffer required

Class I (TTRA) MM1 Southeast: 120-foot Standard and Guideline or greater buffer required

~~Class III HC5 North: Sideslope Standard and Guideline buffer required~~

Class III HC5 South: Sideslope Standard and Guideline buffer required

GEOLOGY:

This unit was not visited by the Forest Geologist; it was visited by other resource specialists and no karst resource concerns were noted. The Forest Geologist mapped similar strata near Phocena and Nehenta Bay, adjacent and immediately west of this unit, in summer 2003: although the underlying geologic strata contained minor thin-bedded carbonaceous limestone, no karst development was noted, and the strata primarily contained carbonaceous shale, thin limestone debris flows, and sandstone. Based on mapping of Berg (1973), field reconnaissance during summer 2003, and karst surveys of Unit 89, it was determined that karst development was unlikely in this unit. Because a small portion of the strata is calcareous, a designation of low vulnerability was given to this unit.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 2 miles of the Phocena Bay cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic near Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Scenery: This unit is in a Scenic Viewshed LUD seen from Clarence Strait cruise ship route. On steeper slopes cut 2-3 acre patches. Openings can be slightly larger on more moderate slopes. Look to blend these openings with natural openings or patterns in forest cover if any. Remove no more than about 50% of stand. Objective is Forest Plan VGO of partial retention.

SILVICULTURE:

Vegetation: Unit is a well stocked, smaller diameter western hemlock stand with a spruce and red cedar component. Mistletoe infections are patchy throughout unit. Natural regeneration is extensive throughout entire unit. The shrub/forb cover is generally light, except along the lower 1/3 of unit, where menziesia cover dominates.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, removing approximately 50% basal area through individual tree marking. Favor mistletoe infected trees first in selection for removal. A mix of tree species will be left to maintain original species composition. Ensure a windfirm buffer along stream in southeast corner of unit by widening buffer and/or feathering the edges.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that a windfirm buffer along the steeply incised V-notch in the southeast corner of the unit where slopes exceed 72% is required (BMP 13.2, 13.5). Single-tree selection prescription will promote long-term slope stability along the upper (eastern) boundary. About 2 acres of slopes greater than 72% will be harvested.

TIMBER:

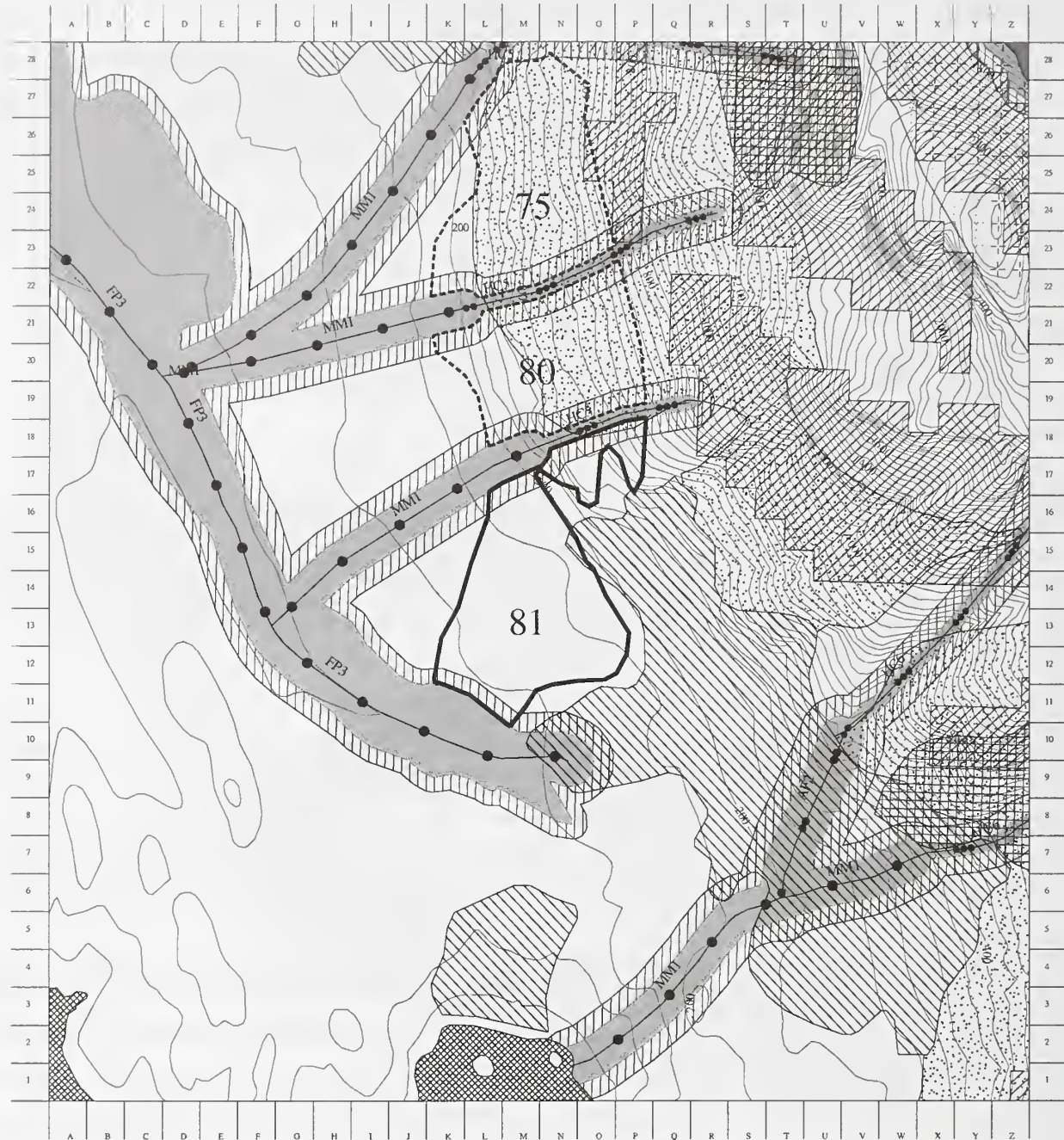
This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Interagency bald eagle MOU applies. there is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:81 (33 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grdp1_81.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grdp1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	81	Planned Unit Acres:	33	Silvicultural Prescription:	STS
LUD:	SV			Quad:	KTNA6NE
		Primary WAA Number:	101	Photo:	298-94
		Logging Prescriptions:	helicopter yarding	Town/Range/Sect:	77S90E14
				Total Estimated Harvest Volume (CCF):	913

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED: 81

Class I (TTRA) FP3 South: 100-foot Standard and Guideline or greater buffer required

Class I (TTRA) MM1 Southeast: 120-foot Standard and Guideline or greater buffer required

Class III HC5 South: ~~Sideslope Standard and Guideline buffer required~~

GEOLOGY:

This unit was not visited by the Forest Geologist; it was visited by other resource specialists and no karst resource concerns were noted. The Forest Geologist mapped similar strata near Phocena and Nahenta Bay, adjacent and immediately west of this unit, in summer 2003: although the underlying geologic strata contained minor thin-bedded carbonaceous limestone, no karst development was noted, and the strata primarily contained carbonaceous shale, thin limestone debris flows, and sandstone. Based on mapping of Berg (1973), field reconnaissance during summer 2003, and karst surveys of Unit 89, it was determined that karst development was unlikely in this unit. Because a small portion of the strata is calcareous, a designation of low vulnerability was given to this unit.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 2 miles of the Phocena Bay cabin, which is used during the timeframe of harvest. With a log barge and helicopter traffic near Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. ~~Use local publications and the reservation system to notify the public of harvest activities.~~

SILVICULTURE:

Vegetation: Unit lies on level and rolling ground and is dominated by western hemlock and western red cedar. There is a minor Sitka spruce component. Mistletoe infection is severe in most western hemlock. Stem decay is heavy in mature western red cedar.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, removing approximately 50% basal area through individual tree marking. Target mistletoe infected trees and decadent trees in selection for removal. A mix of tree species will be left to maintain original species composition.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that the single-tree selection prescription mitigates slope stability concerns along the northeast unit boundary by maintaining root strength and snow intercept (BMPs 13.2, 13.5). About 2 acres of slopes greater than 72% will be harvested.

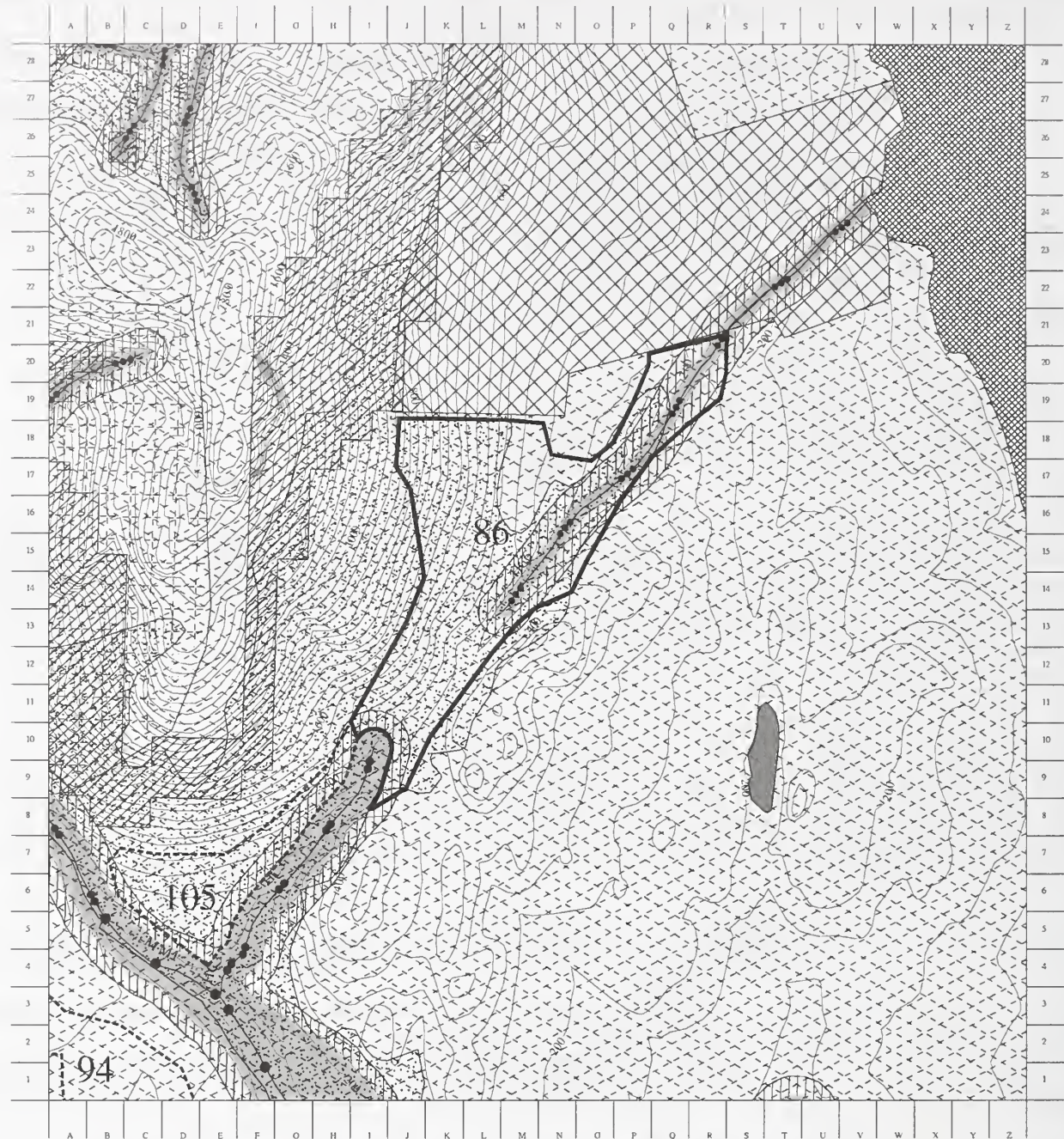
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:86 (57 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_86.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl_aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	86	Planned Unit Acres:	57	Silvicultural Prescription:	2ACCR STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	298-24	Town/Range/Sect:	77S91E20
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):		2,464	

HERITAGE RESOURCES:

Adjacent to historic mining features, none found during survey. Protect any undiscovered heritage features if located during harvest activities and notify archaeologist. H1, H2

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II (TTRA) HC3 Southwest: 100-foot Standard and Guideline or greater buffer required
Class III HC6 Northeast: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

Encumbered lands (overselection by Cape Fox)

RECREATION/SCENERY:

Unit visible from Nichols Passage and Metlakatla. Maintain most of forested texture on steep western portion of unit with 2-acre openings, 50% retention. Adopted VQO is partial retention.

SILVICULTURE:

Vegetation: Unit is a mix of species including western hemlock, yellow cedar, Sitka spruce, and shore pine. The steeper slopes are well drained and better stocked. In the lower reaches there are areas of low site productivity.

Desired Future Condition: Stand will be managed as two-aged with windfirm reserve clumps and scattered trees along the lower, eastern half of unit. In the upper regions, where visuals are a concern, the stand will have multiple canopy layers, resulting in an uneven-aged stand. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a two-aged clearcut with reserves prescription on the lower, eastern reaches (approximately 36 acres). In this area, retain trees either singly, in clumps, or in strips in a way so that the overall crown competition factor is 30 or greater. In the upper, western portion of the stand (approximately 21 acres), apply a single-tree selection prescription, retaining approximately 50% basal area, either through individual tree marking or designation by description. A mix of species will be left to maintain original species composition. Place the oversteepened slopes in the northwestern corner of the unit in reserve to maintain slope stability.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that slopes up to 80% are suitable for harvest. Slopes over 80% will be reserved from harvest (BMP 13.5). About 25 acres of slopes greater than 72% will be harvested.

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh). Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:88 (6 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_88.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	88	Planned Unit Acres:	6	Silvicultural Prescription:	STS
LUD:	SV			Quad:	KTNA6NE
				VCU Number:	76201
		Primary WAA Number:	101	Photo:	298-92
				Town/Range/Sect:	77S90E24
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):	211

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

Proposed harvest Unit 88 is underlain by light-gray slaty limestone interbedded with chert pebble conglomerate. Slopes in this unit range from 25-50%. The harvest unit is bounded to the northwest by a steep cliff face. Limestone is visible in the upper cliff face and in some of the root wads of windthrown trees. Soils in the unit appear to be predominately mineral soils (Ulloa [> 20" depth] Soils) with minor amounts of glacial till. No karst features were seen in or adjacent to the proposed harvest unit. No surface streams were found to be present within the unit indicating the presence of internal drainage. The karst vulnerability of the unit is classified as moderate. Partial suspension is required.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 1 mile of the Phocena Bay cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic near Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Scenery: Unit is visible from Phocena Bay and from boat route along west side of Gravina. Harvest small (2 acre) openings that if visible should blend with natural openings immediately around unit. At least 50% retention. Adopted VQO is partial retention.

SILVICULTURE:

Vegetation: This unit is a well-stocked stand with a near even mix of hemlock and spruce in the overstory. There are no insect/disease problems found within unit, although mistletoe infection was found adjacent to unit. The overall stand vigor is excellent and there is minimal physical damage and stem decay. Windthrow hazard is high and will be a consideration in selection of leave trees.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, removing approximately 50% basal area or less depending on windfirmness issues, through individual tree marking. A mix of tree species will be left to maintain original species composition. Harvest openings will be small (less than 200 feet) to minimize susceptibility to blowdown (BMP 13.2, 13.5).

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that the single-tree selection prescription will promote the maintenance of root strength and snow intercept. Harvest openings will be small (less than 200 feet) to minimize susceptibility to blowdown (BMP 13.2, 13.5). About 2 acres of slopes greater than 72% will be harvested.

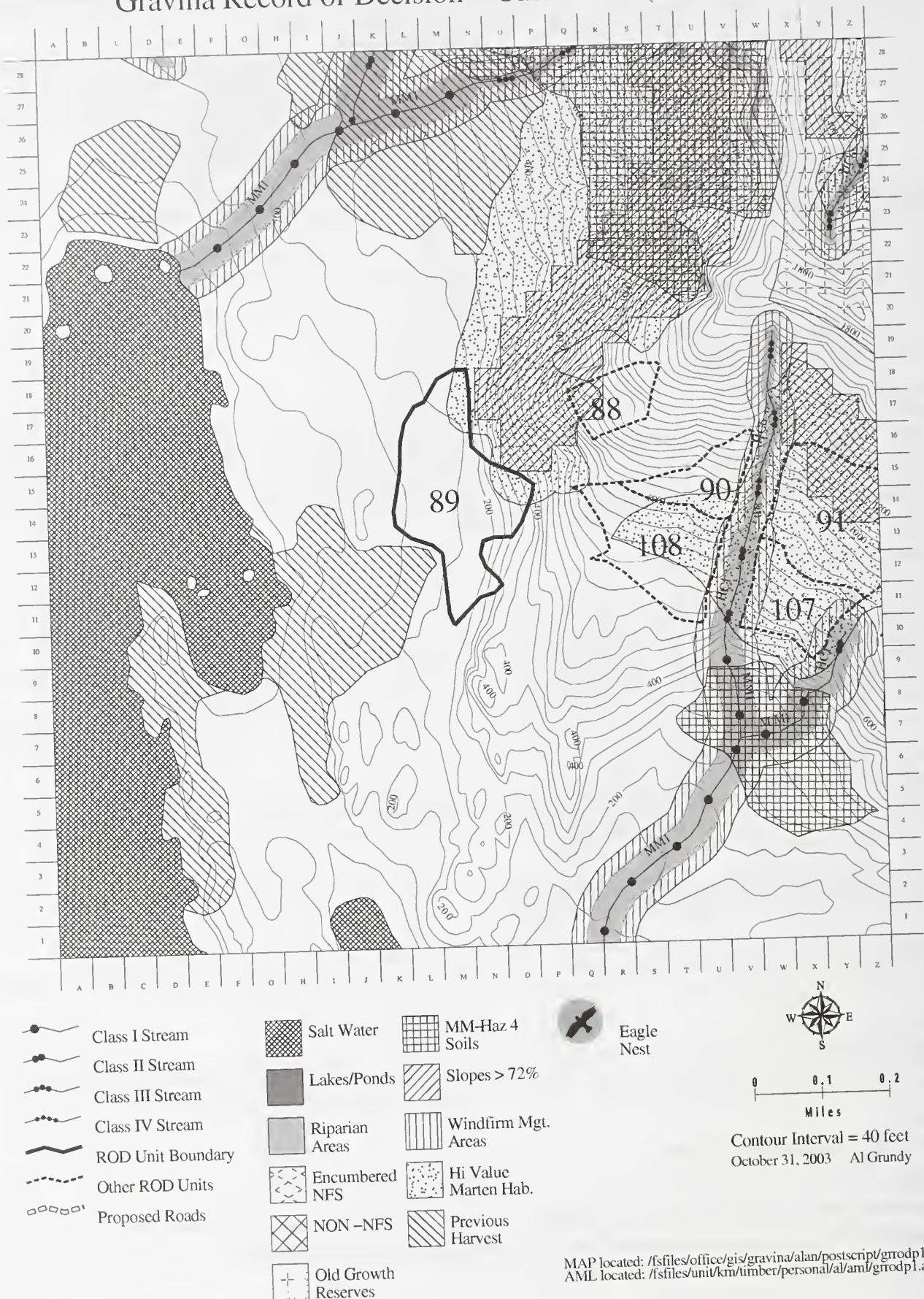
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:89 (25 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	89	Planned Unit Acres:	25	Silvicultural Prescription:	2ACCR STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76201
		Primary WAA Number:	101	Photo:	298-92	Town/Range/Sect:	77S90E24
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			814

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

Carbonaceous shale with thin carbonaceous limestone interbeds are visible on the upper slopes of the eastern portion of the unit. The upper slope and back-line of the unit is bounded by cliffs. Several talus caves were located in these cliffs. These may be the caves reported in a memo by members of the Glacier Grotto to the USFS during scoping. Slopes in this unit range from <10-90%. No collapsed karst features were seen in or adjacent to the proposed harvest unit. Very small springs issuing from the lower contact of the carbonaceous limestone interbed in the carbonaceous shale were found in the eastern portion of the unit. The karst vulnerability of this unit is classified as low. Partial suspension is required on the talus slopes and carbonate areas in the eastern portion of the unit. The talus caves along the eastern portion of the harvest unit require a minimum 100-foot no-harvest buffer.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 1 mile of the Phocena Bay Cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic in Phocena Bay, recreation use of this area will be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Visuals: Eastern corner of unit sits on lower portion of steep slope above Phocena Bay and just below Unit 88. Recommend a few small 2-acre openings that blend with several natural openings surrounding this unit. 50% retention. Adopted VQO is partial retention.

SILVICULTURE:

Vegetation: The overstory is composed of western hemlock, Sitka spruce, western red cedar, and red alder. The shrub layer consists of blueberry, red alder, and salal. The very western edge consists of western red cedar forest, dominated by large, cull cedar trees and small, heavily mistletoe-infected western hemlock in the second story. Windthrow potential is estimated to be moderate to high.

Desired Future Condition: Stand will be managed as two-aged with windfirm reserve clumps and scattered trees along the lower, western 3/4 of unit. In the upper regions, where visuals are a concern, the stand will have multiple canopy layers, resulting in an uneven-aged stand. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a two-aged clearcut with reserves prescription to the lower, western reaches (approximately 21 acres). In this area, retain trees either singly, in clumps, or in strips in a way so that the overall crown competition factor is 30 or greater. Target the cull red cedar and mistletoe infected trees for removal. In the upper, eastern portion of the stand (approximately 4 acres) apply a single-tree selection prescription, retaining approximately 70% basal area, through individual tree marking. This prescription will address soils and visual concerns. A mix of species will be left to maintain original species composition.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that soil stability concerns will be addressed by retaining 70% basal area in the eastern part of the unit (BMPs 13.2, 13.5). About 3 acres of slopes greater than 72% will be harvested.

TIMBER:

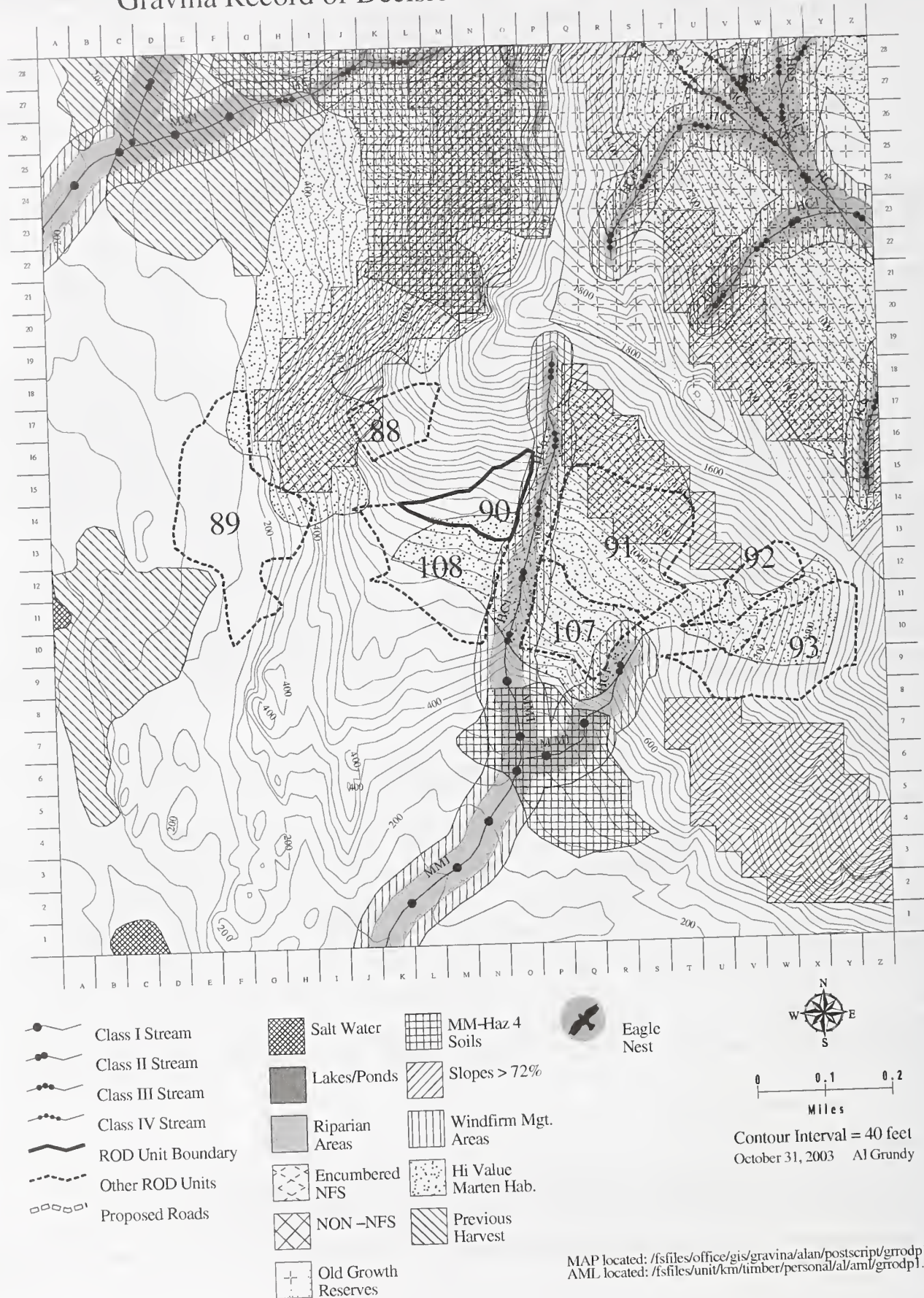
This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:90 (7 Acres)



Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	90	Planned Unit Acres:	7	Silvicultural Prescription:	STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	298-92	Town/Range/Sect:	77S90E24
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			250

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC6 East: Sideslope Standard and Guideline buffer required

GEOLOGY:

The unit is underlain by light-gray slaty limestone. Slopes adjacent to and within the harvest unit that are underlain by limestone range from 30-90%. In this unit, carbonate areas have a mosaic of shallow organic soils (10-20%, McGilvery soils) and mineral soils (Sarkar[<20" depth] soils) with minor amounts of glacial till. The surface of the limestone has been solution modified after glaciation. Epikarst development is shallow to non-existent on the steeper slopes and is sometimes visible at the surface. The karst vulnerability of these units is classified as moderate. Partial suspension is required.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 1 mile of the Phocena Bay Cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic around Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Scenery: Adopted VQO is partial retention. Units 90-93 highly visible from boat route along west side of Gravina and portions of them visible from Phocena Bay. Because of large size of combined proposed treatment area, maintain most of forested texture by individual tree selection or small group selection (2-acre openings). 50% retention.

SILVICULTURE:

Vegetation: Heavy windthrow has led to many areas of small diameter trees in competition and sparse vegetation. The overstory is dominated by western hemlock and minor amounts of Sitka spruce, with red alder also being present. The shrub layer is sparse and consists of blueberry, devil's club, and salmonberry.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, removing approximately 50% basal area through individual tree marking. Favor windfirm trees in selection for retention trees. A mix of tree species will be left to maintain original species composition.

SOILS

Slopes Greater than 72%: No slopes greater than 72% will be harvested.

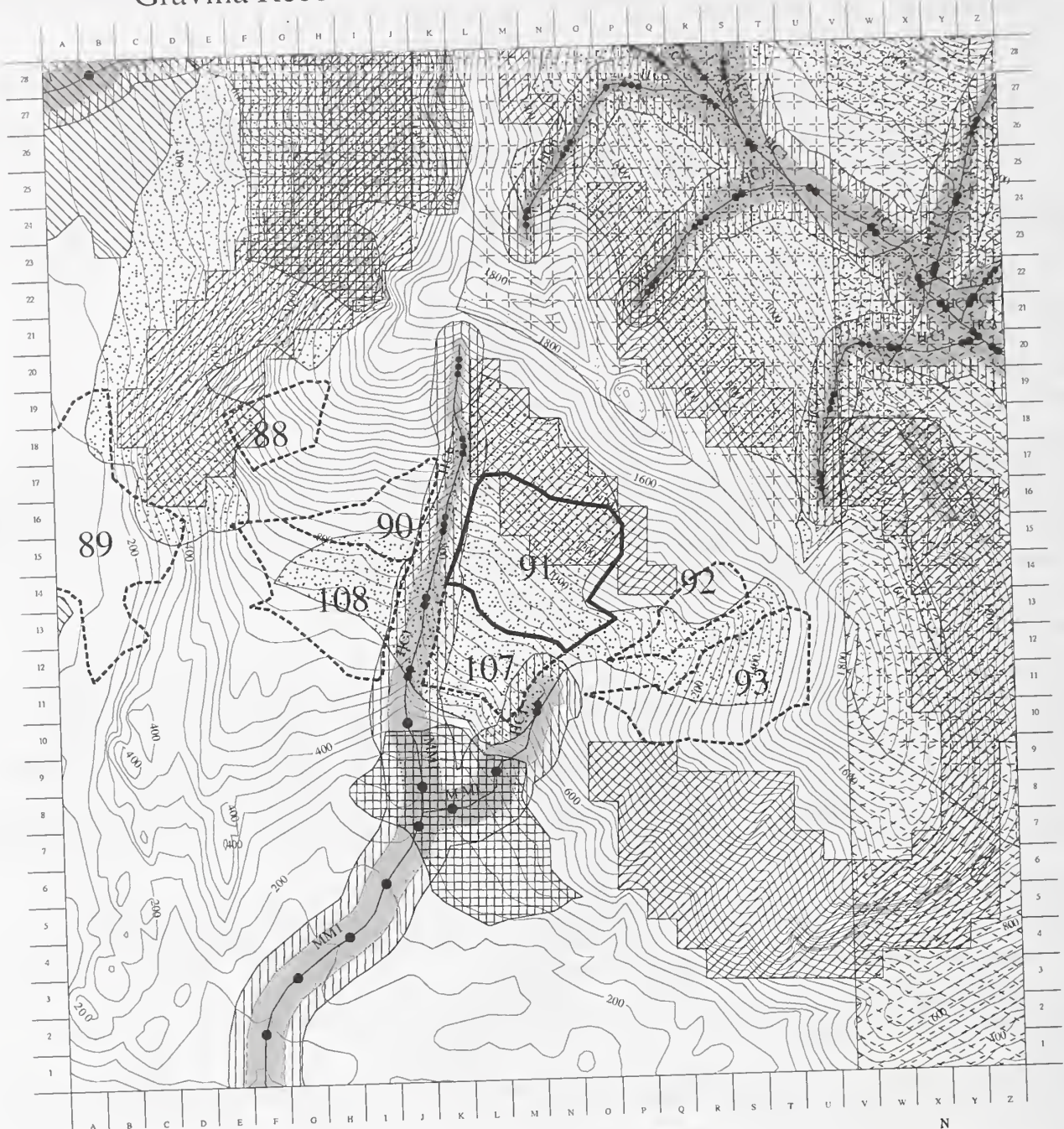
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:91 (22 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grodp1_91.eps
AML located: /fsfiles/unit/kn/timber/personal/al/aml/grodp1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	91	Planned Unit Acres:	22	Silvicultural Prescription:	STS
LUD:	SV			Quad:	KTNA6NE
				VCU Number:	76501
		Primary WAA Number:	101	Photo:	298-92
				Town/Range/Sect:	77S90E24
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):	894

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC6 Northwest: Sideslope Standard and Guideline buffer required

Class II (TTRA) HC1 South: 100-foot Standard and Guideline or greater buffer required

GEOLOGY:

The unit is underlain by light-gray slaty limestone. Slopes adjacent to and within the harvest unit that are underlain by limestone range from 30-90%. In this unit, carbonate areas have a mosaic of shallow organic soils (10-20%, McGilvery soils) and mineral soils (Sarkar[<20" depth] soils) with minor amounts of glacial till. The surface of the limestone has been solution modified after glaciation. Epikarst development is shallow to non-existent on the steeper slopes and is sometimes visible at the surface. The karst vulnerability of these units is classified as moderate. Partial suspension is required. Approval of harvest on slopes >72% based on soil scientist's recommendation.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 1 mile of the Phocena Bay cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic around Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Scenery: Adopted VQO is partial retention. Units 90-93 are highly visible from boat route along west side of Gravina and portions of them visible from Phocena Bay. Because of large size of proposed treatment area, maintain most of forested texture by individual tree selection or small group selection (2-acre openings). 50% retention.

SILVICULTURE:

Vegetation: Stand overall is well stocked with western hemlock and some Sitka spruce. Mistletoe infection is minimal in western hemlock. Natural regeneration is patchy but adequate. There is very little shrub/forb cover in the understory. Windthrow hazard is high in the upper ½ of unit, moderate elsewhere.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, removing approximately 50% basal area through individual tree marking. Favor windfirm trees for retention. A mix of tree species will be left to maintain original species composition. This will address soils and visuals concerns.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation found about 10 acres of slopes greater than 72% present along the northern unit boundary. Retain 50% basal area in this part of the unit to maintain rooting strength and snow intercept, which will promote slope stability (BMP 13.5).

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh). Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:92 (5 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 A1 Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/errodpl_92.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	92	Planned Unit Acres:	5	Silvicultural Prescription:	STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	198-105	Town/Range/Sect:	77S90E24
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			163

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

The unit is underlain by light-gray slaty limestone. Slopes adjacent to and within the harvest unit that are underlain by limestone range from 30-90%. The majority of this unit lies on an earthflow deposit at the confluence of several debris torrents that have failed or are continuing to fail. Limestone is visible only in the V-notches associated with the streams and debris flows. Epikarst development is shallow to non-existent on the steeper slopes and is sometimes visible at the surface. The karst vulnerability of these units is classified as moderate. Partial suspension is required.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 1 mile of the Phocena Bay cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic around Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Scenery: Adopted VQO is partial retention. Units 90-93 are highly visible from boat route along west side of Gravina and portions of them visible from Phocena Bay. Because of large size of proposed treatment area, maintain most of forested texture by individual tree selection or small group selection (2 acre). 60% retention.

SILVICULTURE:

Vegetation: Unit is a small, steep unit that lies in a wind-protected bowl. It is a well-stocked stand, composed of western hemlock and Sitka spruce trees fairly evenly spaced throughout the unit. Understory is dominated by blueberry. There are no mistletoe, insect, or disease problems.

Desired Future Condition: Future stand will have multiple canopy layers with different cohorts resulting in an uneven-aged stand. Overall stand will be uneven-aged. 60% of the stand will be retained to meet visual quality objectives and to provide slope stability. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single tree selection prescription, retaining approximately 60% basal area through individual tree marking. Favor windfirm trees in selection for retention. A mix of tree species will be left to maintain original species composition.

SOILS:

Slopes Greater than 72%: No slopes greater than 72% were found in the unit.

The results of an on-site soil stability investigation determined that partial harvest, retaining approximately 60% of the basal area, will address slope stability concerns by retaining rooting strength and snow intercept (BMP 13.2).

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

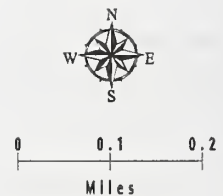
Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:93 (17 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grdp1_93.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grdp1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	93	Planned Unit Acres:	17	Silvicultural Prescription:	STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	298-92	Town/Range/Sect:	77S90E24
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			574

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II (TTRA) HC1 West: 100-foot Standard and Guideline or greater buffer required.

GEOLOGY:

The unit is underlain by light-gray slaty limestone. Slopes adjacent to and within the harvest unit that are underlain by limestone range from 30-90%. The northern lobe of this unit (old Unit 92) lies on an earthflow deposit at the confluence of several debris torrents that have failed or are continuing to fail. Limestone is visible only in the V-notches associated with the streams and debris flows. Epikarst development is shallow to non-existent on the steeper slopes and is sometimes visible at the surface. The karst vulnerability of these units is classified as moderate. Partial suspension is required.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 1 mile of the Phocena Bay cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic around Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Visuals: Adopted VQO is partial retention. Units 90-93 are highly visible from boat route along west side of Gravina and portions of them visible from Phocena Bay. Because of large size of proposed treatment area, maintain most of forested texture by individual tree selection or small group selection (2 acre). Approximately 60% retention.

SILVICULTURE:

Vegetation: Stand is dominated by western hemlock. Area displays a history of wind disturbance, which is estimated to be moderate to high. Understory is sparse, dominated by blueberry. Abundant mountain hemlock occurs above the 1500 ft. elevation line. There were no mistletoe, insect, or disease problems noted.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, retaining approximately 60% basal area through individual tree marking. A mix of tree species will be left to maintain original species composition. Favor windfirm trees in selection for retention.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that soils above 1,600 feet may be unstable. Therefore, the eastern unit boundary has been placed no higher than 1600 ft to exclude unstable slopes (BMPs 13.2, 13.5). No slopes over 72% will be harvested.

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:94 (35 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Enumerated NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /fsfiles/office/gis/gravina/alan/postscript/grrodpl_94.eps
AML located: /fsfiles/unit/km/timber/personal/al/aml/grrodpl_aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	94	Planned Unit Acres:	35	Silvicultural Prescription:	2ACCR STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	198-106	Town/Range/Sect:	77S91E30
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			1,002

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II HC3 North east: 100-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Unit is visible from Nichols Passage and Metlakatla. Maintain forested texture in northwest steeper portion of unit by creating 2-acre openings. Retain about 40% of stand, most of it in this more visible portion. Adopted VQO is partial retention.

SILVICULTURE:

Vegetation: Unit is convex in shape with the lower, southeastern forest type characterized by shore pine cover, heavy salal, open canopy, and rolling topography. The northwestern portion of the unit is steeper with well-drained soils, western hemlock, and a sparse understory. Stand structure in the northwest is characterized by two canopy layers of western hemlock. The second cohort is approximately 10-15 feet tall. Mistletoe, particularly in the northwest portion of the unit, is prevalent throughout.

Desired Future Condition: Stand will be managed as two-aged with windfirm reserve clumps and scattered trees along the lower half of unit on the gentle, rolling terrain. In the upper regions, where visuals are a concern, the stand will have multiple canopy layers, resulting in an uneven-aged stand. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a two-aged clearcut with reserves prescription in the lower, southeastern reaches (approximately 22 acres). In this area, retain trees either singly, in clumps, or in strips in a way so that the overall crown competition factor is 30 or greater. There will be approximately 30-40% of the stand basal area retained to accomplish the objective. In the upper, steeper northwestern portion of the stand (approximately 13 acres), apply a single-tree selection prescription, retaining approximately 50% basal area through individual tree marking. Favor mistletoe free trees for selection for retention. Use of a single-tree selection prescription will address visual and slope stability concerns. A mix of species will be left to maintain original species composition.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that windthrow in the northwestern section of the unit may pose a threat to soil stability. To mitigate this concern, the single-tree selection prescription will keep openings small (BMP 13.5). Approximately 8 acres of slopes greater than 72% will be harvested.

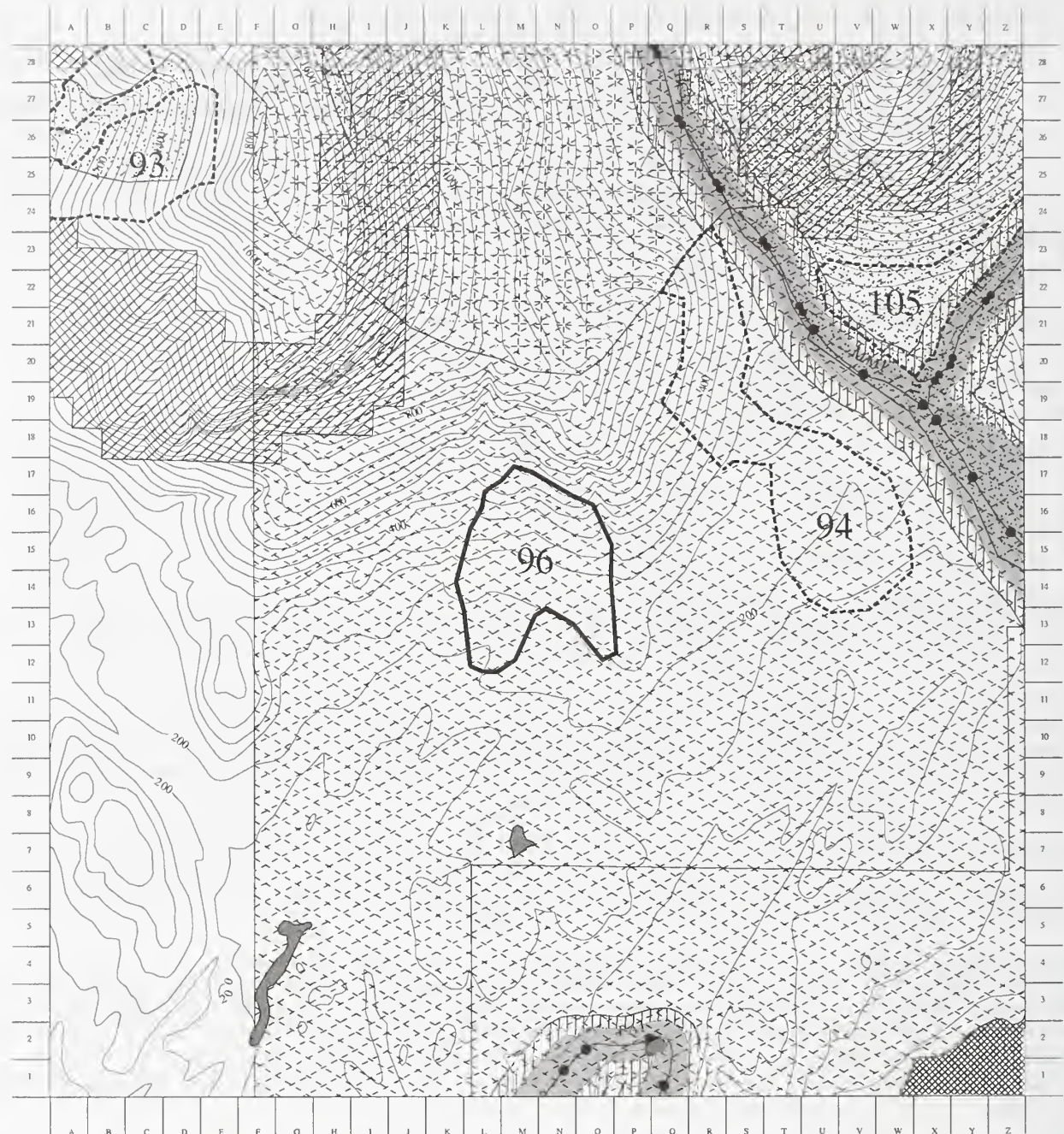
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

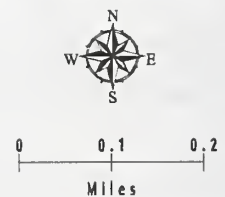
Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:96 (23 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Contour Interval = 40 feet
October 31, 2003 A1 Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_96.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	96	Planned Unit Acres:	23	Silvicultural Prescription:	2ACCR STS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	198-106	Town/Range/Sect:	77S91E30
		Logging Prescriptions:	helicopter	Total Estimated Harvest Volume (CCF):			669

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

No resource concerns were identified.

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Unit is visible from Nichols Passage and Metlakatla. Maintain forested texture in northern steeper portion of unit by creating 2-acre openings. Retain about 50% of stand, most of it in this more visible portion. Adopted VCO is partial retention.

SILVICULTURE:

Vegetation: Unit is well drained, two cohort, with western hemlock and Sitka spruce in the upper reaches. The forest type transitions to western hemlock-western red cedar in the lower reaches with large, cull western red cedar in the overstory and smaller diameter western hemlock and Sitka spruce underneath. Canopy closure is varied throughout. A Pacific yew tree was found within unit.

Desired Future Condition: Stand will be managed as two-aged with windfirm reserve clumps and scattered trees along the lower, southern, gently sloping portion of unit. In the upper regions, where visuals are a concern, the stand will have multiple canopy layers, resulting in an uneven-aged stand. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a two-aged clearcut with reserves prescription to the lower, southern reaches of the unit (approximately 12 acres). In this area, retain trees either singly, in clumps, or in strips in a way so that the overall crown competition factor is 30 or greater. There will be approximately 30-40% of the stand basal area retained to accomplish the objective. In the upper, northern portion of the stand (approximately 11 acres), apply a single-tree selection prescription to address visual concerns, retaining approximately 50% basal area through individual tree marking. A mix of species will be left to maintain original species composition. Flag and document any yew trees found during layout. Implement a site-specific silvicultural prescription that will maintain the Pacific yew's regeneration capabilities on site.

SOILS:

No resource concerns were identified.

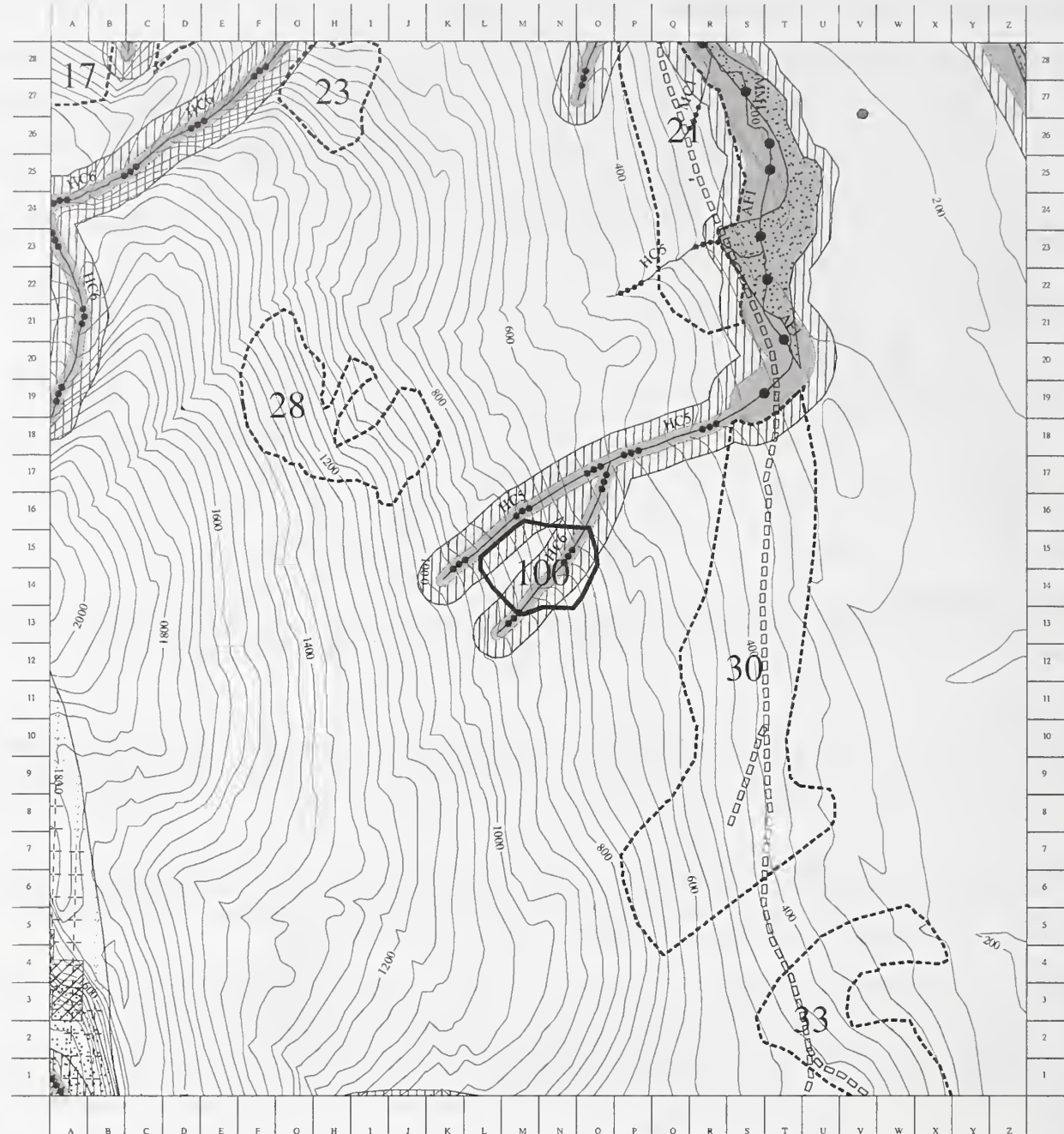
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:100 (8 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_100.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl_100.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	100	Planned Acres:	8	Silvicultural Prescription:	CC
LUD:	TP			Quad:	KTNB6SE
				VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-65
				Town/Range/Sect:	76S89E12
		Logging Prescriptions:	helicopter	Total Estimated Harvest Volume (CCF):	433

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC6 Central: Sideslope Standard and Guideline buffer required
Class III HC5 Northwest: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Stand is very diverse with a wide mix of species and a wide variety of size classes. The overstory consists of Sitka spruce, western red cedar, Alaska yellow cedar, and western hemlock, with some Pacific silver fir in the middlestory. Mistletoe infections are mostly minor but scattered throughout the entire unit. Physical defect and stem decay is high, particularly in the cedar. Windthrow hazard is estimated to be low to moderate.

Desired Future Condition: Stand will be even aged. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a clearcut prescription to entire unit. This prescription will reduce mistletoe, maximize economic return, regenerate a healthy stand with less defect, and minimize risk of windthrow.

SOILS:

No resource concerns were identified.

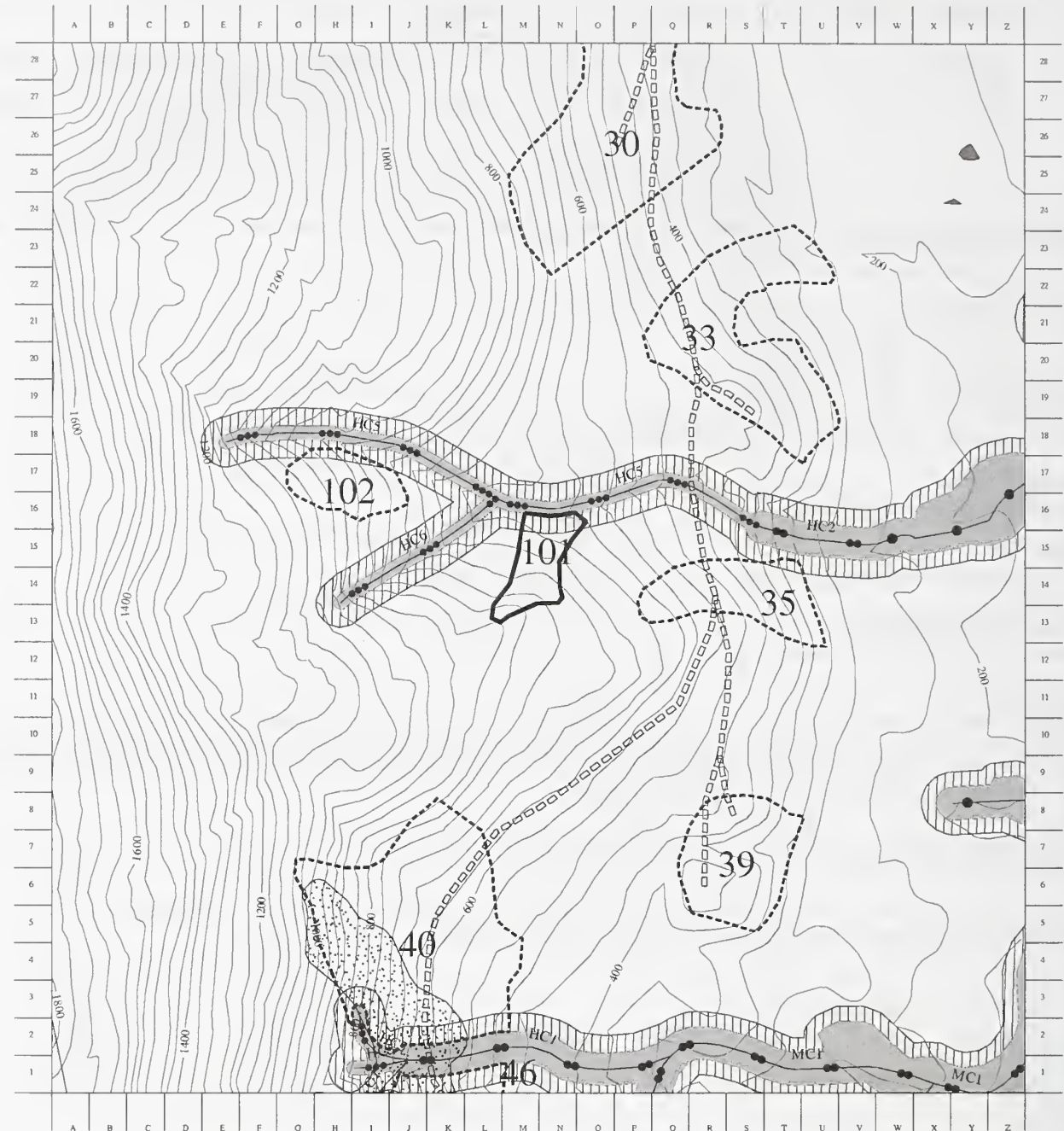
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:101 (5 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle
Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_101.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	101	Planned Unit Acres:	5	Silvicultural System:	ST		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-63	Town/Range/Sect:	76S89E13
		Logging Systems:	helicopter	Total Estimated Harvest Volume (CCF):		264	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC5 North: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified

GEOLOGY:

No resource concerns were identified

RECREATION/SCENERY:

No resource concerns were identified

SILVICULTURE:

Vegetation: Unit is multi-storied with an open canopy. The overstory consists of medium sized western hemlock, yellow cedar and large, highly defected western red cedar. Plant associations within unit include WH-WRC/blueberry and mixed conifer/salal indicating a variance in site productivity. There are moderate severities of yellow cedar decline present. Windthrow hazard is estimated to be low.

Desired Future Condition: Stand will be even aged, with a few mature cedar trees per acre scattered through the unit to promote species diversity in the natural regeneration. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a seed tree prescription, leaving 2-5 mature, healthy red and/or yellow cedar trees per acre scattered through the unit. Favor yellow cedar seed trees in the northern third of the unit. These trees may be removed once natural regeneration has been established.

SOILS:

No resource concerns were identified.

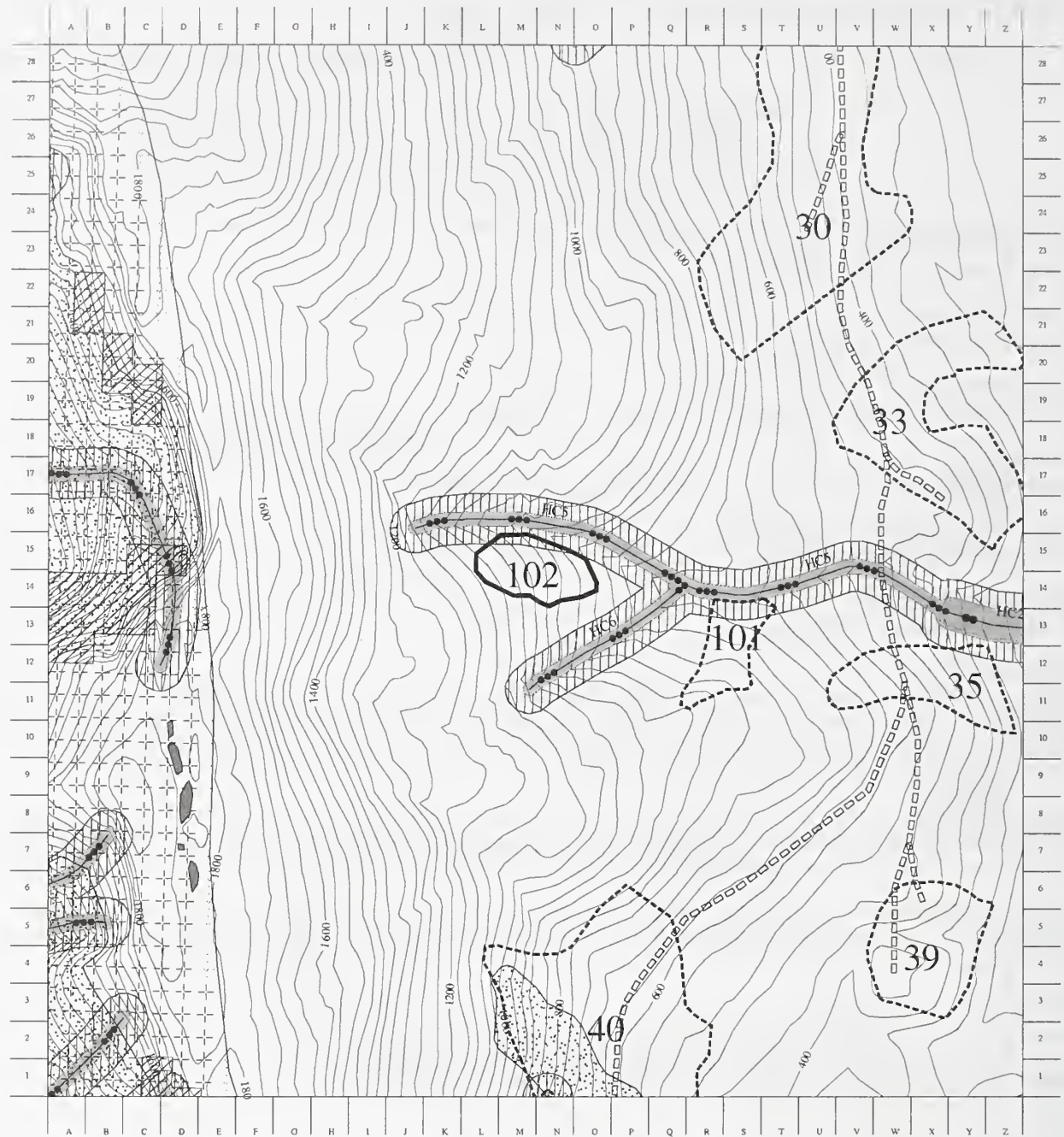
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:102 (6 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 A1 Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodpl_102.eps
AML located: /sfiles/unit/km/timber/personal/a1/aml/grodpl1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	102	Planned Unit Acres:	6	Silvicultural Prescription:	ST		
LUD:	TP			Quad:	KTNB6SE	VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-63	Town/Range/Sect:	76S89E13
		Logging Prescriptions:	helicopter	Total Estimated Harvest Volume (CCF):			301

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC5 North: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: The unit is a mix of small to medium diameter western hemlock and Alaska yellow-cedar with an open-canopied structure. The western end of the stand is of lower productivity with mountain hemlock and severe yellow cedar decline. Approximately half of the standing trees are dead/dying in the western (upper) section of the unit. Windthrow hazard is estimated to be low. There was evidence of heavy deer browse.

Desired Future Condition: Stand will be even aged, with a few mature cedar trees per acre scattered through the unit to promote species diversity in the natural regeneration. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a seed tree prescription, leaving 2-5 mature, healthy yellow cedar trees per acre scattered through the unit. These trees may be removed once natural regeneration has been established in approximately 5 years following harvest. T2

SOILS:

No resource concerns were identified.

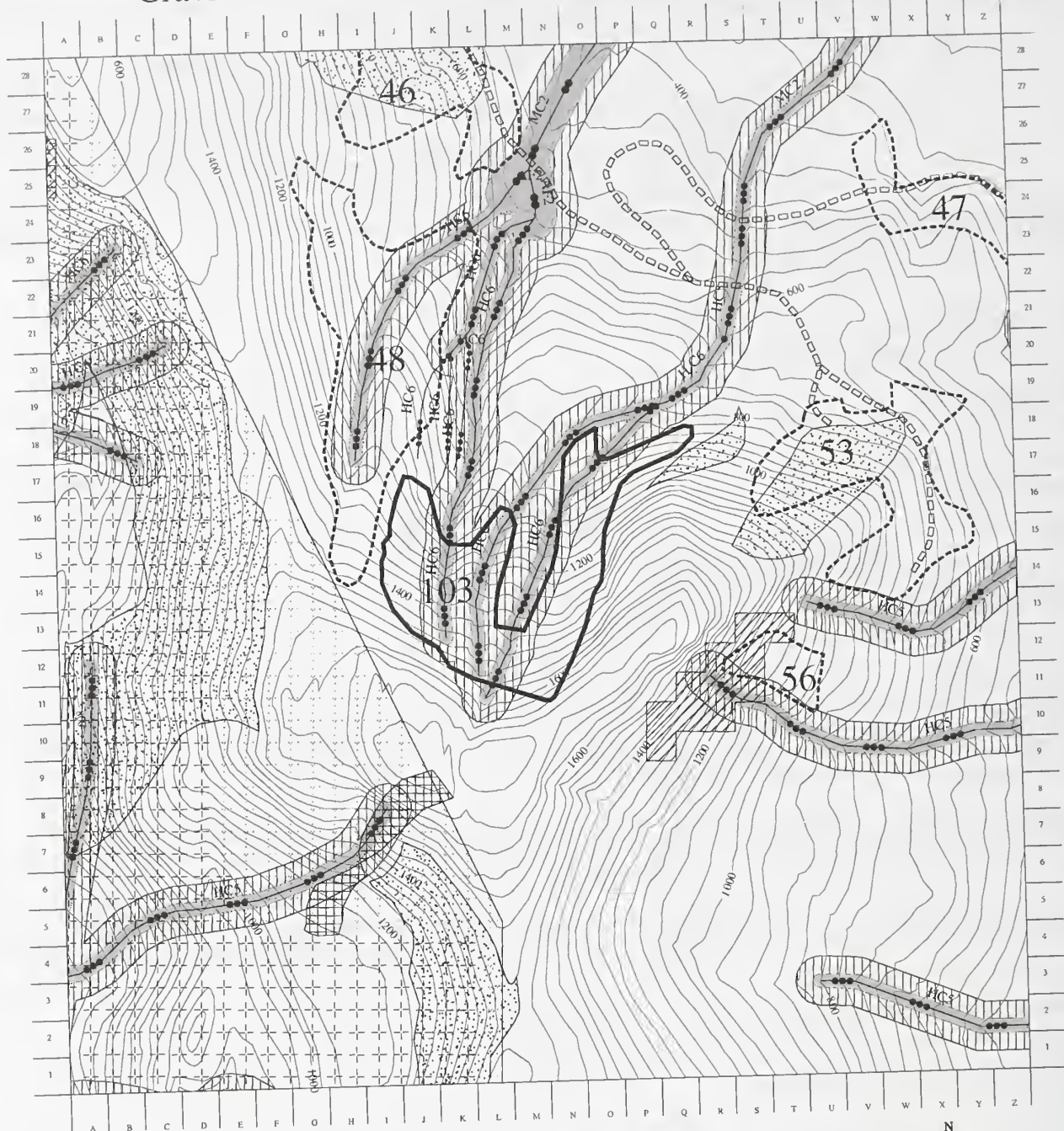
TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:103 (34 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



Eagle Nest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grrodpl_103.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grrodpl_103.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	103	Planned Unit Acres:	34	Silvicultural Prescription:	STS
LUD:	TP			Quad:	KTNB6SE
				VCU Number:	76301
		Primary WAA Number:	101	Photo:	198-61
				Town/Range/Sect:	76S89E24
		Logging Prescriptions:	helicopter	Total Estimated Harvest Volume (CCF):	1,115

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class III HC6 Central: Sideslope Standard and Guideline buffer required

Class III HC6 Northeast to Southeast: Sideslope Standard and Guideline buffer required

Class III HC6 West: Sideslope Standard and Guideline buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

No resource concerns were identified.

SILVICULTURE:

Vegetation: Upper portion of unit has a dominant overstory of western/mountain hemlock and a small Sitka spruce component. Understory is filled with salmonberry and devil's club. The lower portion of the unit transitions to a western hemlock/western red cedar forest. The overstory is decadent with many large, dead/dying trees. There are large, scattered boulders throughout entire unit. Mistletoe is light to moderate. Windthrow is estimated to be low.

Desired Future Condition: Stand will have multiple canopy layers. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a single-tree selection prescription, removing approximately 50% basal area through individual tree marking. Target the dead/dying trees first when selecting trees for removal. Approximately 1 acre of slopes greater than 72% in the northern portion of the unit will have all trees retained. A mix of tree species will be left to maintain original species composition. This prescription will help promote soil stability throughout the unit.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that slopes greater than 72% in the northern part of the unit will be reserved from harvest to avoid potentially unstable soils (BMPs 13.2, 13.5).

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

No resource concerns were identified.

Gravina Record of Decision Unit:105 (16 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /sfiles/office/gis/gravina/alan/postscript/grodp1_105.eps
AML located: /sfiles/unit/km/timber/personal/al/aml/grodp1.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	105	Planned Unit Acres:	16	Silvicultural Prescription:	2ACCR		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	198-106	Town/Range/Sect:	77S91E19
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			769

HERITAGE RESOURCES:

Two historic mining features were located within unit during survey. Protect these features through avoidance and any other undiscovered heritage features if located during harvest activities and notify archaeologist. H1, H2

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II (TTRA) HC3 East: 100-foot Standard and Guideline or greater buffer required

Class II (TTRA) HC3 West: 100-foot Standard and Guideline or greater buffer required

Class I (TTRA) MM1 Southwest: 120-foot Standard and Guideline or greater buffer required

GEOLOGY:

No resource concerns were identified.

LANDS:

Encumbered lands (overselection by Cape Fox)

RECREATION/SCENERY:

Approximately 30-40 percent retention needed in steeper portions of unit to meet visual objective.

SILVICULTURE:

Vegetation: Unit is a low-elevation, concave-shaped area that lies between two buffered streams. The lower reaches consist of western hemlock-western red cedar forest type that transitions into a multi-layered western hemlock stand with an occasional spruce. Wind disturbance has played a major role in the stand development. The majority of the stand is in stem exclusion with areas of understory re-initiation. The unit is visible from salt water in the upper slopes.

Desired Future Condition: Stand will be managed as two aged with windfirm reserve clumps and scattered trees. Natural regeneration is expected to be abundant. Future treatments may include pre-commercial thinning at age 15-25 to promote tree growth and species diversity.

Treatment: Apply a two-aged clearcut with reserves prescription. Retain trees either singly, in clumps, or in strips in a way so that the overall crown competition factor is 30 or greater. There will be approximately 40% of the stand retained to accomplish the objective. Concentrate the larger openings in the lower reaches where visuals and slope stability are not of concern.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation found approximately 5 acres of slopes greater than 72% in the northeastern corner of the unit. Partial harvest (40% basal area retention) in this area will retain rooting strength and snow intercept (BMP 13.5).

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh). Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:107 (10 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON -NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: //sfiles/office/gis/gravina/alan/postscript/grodpl_107.eps
AML located: //sfiles/unit/km/timber/personal/al/aml/grodpl.aml

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	107	Planned Unit Acres:	10	Silvicultural Prescription:	GS		
LUD:	SV			Quad:	KTNA6NE	VCU Number:	76501
		Primary WAA Number:	101	Photo:	298-92	Town/Range/Sect:	77S90E24
		Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):			331

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II (TTRA) HC1 West: 100-foot Standard and Guideline or greater buffer required

Class II (TTRA) HC1 East: 100-foot Standard and Guideline or greater buffer required

Class I (TTRA) MM1 Southwest: 120-foot Standard and Guideline or greater buffer required

Class I (TTRA) MM1 Southeast: 120-foot Standard and Guideline or greater buffer required

GEOLOGY:

The unit is underlain by light-gray slaty limestone. Slopes adjacent to and within the harvest unit that are underlain by limestone range from 30-60%. In this unit, carbonate areas have a mosaic of shallow organic soils (10-20%, McGilvery soils) and mineral soils (Sarkar[<20" depth] soils) with minor amounts of glacial till. The surface of the limestone has been solution modified after glaciation. Epikarst development is shallow to non-existent on the steeper slopes and is sometimes visible at the surface. The karst vulnerability of these units is classified as moderate. Partial suspension is required.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 1 mile of the Phocena Bay cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic around Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Scenery: Unit 107 highly visible from boat route along west side of Gravina south of Nehenta Bay. Maintain most of forested texture by individual tree selection or small group selection (2-acre openings). Recommend about 50% retention. Adopted VOO is partial retention.

SILVICULTURE:

Vegetation: The stand is multi-aged and displays old-growth characteristics. It is a well-stocked stand, comprised primarily of western hemlock with a Sitka spruce component. Mistletoe infection is patchy throughout stand but minor in severity overall. Windthrow potential is moderate.

Desired Future Condition: Future stand will be a mosaic of small openings with different cohorts resulting in an uneven-aged stand in the lower reaches of the unit. Stand will have multiple canopy layers as a result of individual trees being selected in the upper reaches where visuals are a concern. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a group selection prescription, removing approximately 50% of original basal area during initial entry. Harvest in small groups and/or strips. Openings will not exceed 2 acres and/or strips shall be no wider than two times the average tree height. To address soils concerns in the lower 1/2 of the unit, at least 70% of the basal area will be retained. This will help retain soil stability and promote windfirmness in the retained trees. A mix of tree species will be left to maintain original species composition.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation found slopes greater than 72% in the lower (southern) half of the unit. Partial harvest, retaining 70% of the basal area, will promote slope stability by retaining rooting strength and snow interception (BMP 13.5). Approximately 5 acres of slopes greater than 72% will be harvested.

TIMBER:

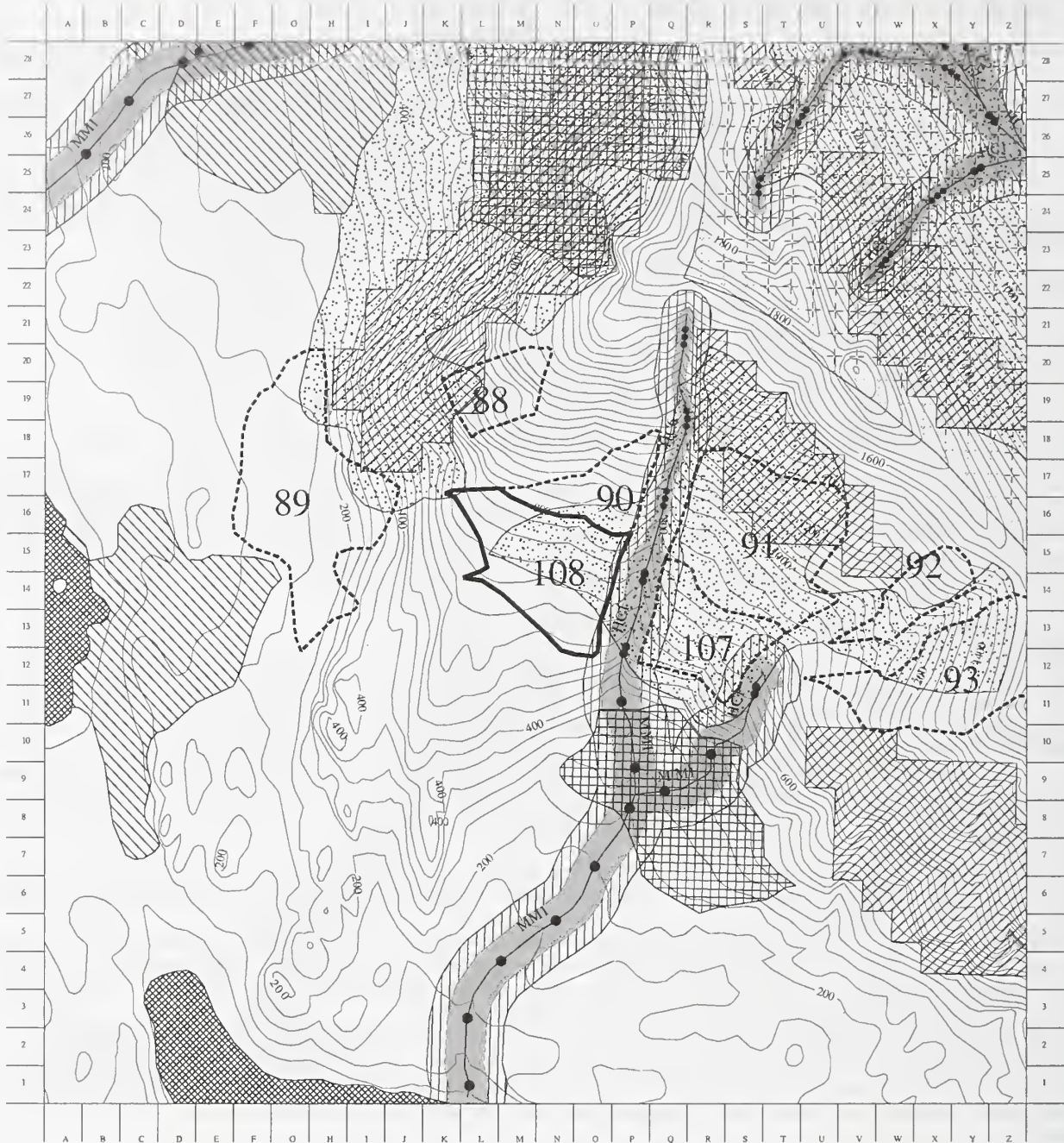
This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply: leave 10-20% of original stand structure, in areas of high-value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh).

Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

Gravina Record of Decision Unit:108 (16 Acres)



- Class I Stream
- Class II Stream
- Class III Stream
- Class IV Stream
- ROD Unit Boundary
- Other ROD Units
- Proposed Roads

- Salt Water
- Lakes/Ponds
- Riparian Areas
- Encumbered NFS
- NON-NFS
- Old Growth Reserves
- MM-Haz 4 Soils
- Slopes > 72%
- Windfirm Mgt. Areas
- Hi Value Marten Hab.
- Previous Harvest



0 0.1 0.2
Miles

Contour Interval = 40 feet
October 31, 2003 Al Grundy

MAP located: /f:/files/office/gis/gravina/alan/postscript/grodpl_108.cps
AML located: /f:/files/unit/km/timber/personal/al/aml/grodpl_108.cps

Unit Data Card – Gravina Island Timber Sale Record of Decision

Unit Number:	108	Planned Unit Acres:	16	Silvicultural Prescription:	GS
LUD:	SV			Quad:	KTNA6NE
				VCU Number:	76201, 76501
	Primary WAA Number:	101	Photo:	298-92	Town/Range/Sect: 77S90E24
	Logging Prescriptions:	helicopter yarding	Total Estimated Harvest Volume (CCF):	664	

HERITAGE RESOURCES:

No resource concerns were identified.

ENGINEERING/ROADS:

No resource concerns were identified.

FISH/WATERSHED:

Class II (TTRA) HC1 East: 100-foot Standard and Guideline or greater buffer required

Class III HC6 Northeast: Sideslope Standard and Guideline or greater buffer required

GEOLOGY:

The majority of this unit is underlain by light-gray slaty limestone, and slopes range from 10-60%. Epikarst development is shallow to non-existent on the steeper slopes and is sometimes visible at the surface. To the west of the present unit boundary, slopes drop to less than 10%, and the surface drainage goes subsurface. Several collapse features are present in this 2-3 acre area, and springs surfacing from the upslope bedrock/soil interface sink into a large collapse feature. This high-vulnerability karst land is considered unsuitable for timber management; it was excluded from the harvest unit and has been removed from the suitable land base. The remainder of the unit is classified as moderate vulnerability karst; partial suspension is required.

LANDS:

No resource concerns were identified.

RECREATION/SCENERY:

Recreation Concern: This unit is within 1 mile of the Phocena Bay cabin, which is used during the timeframe of harvest. With log barge and helicopter traffic around Phocena Bay, recreation use of this area may be affected.

Recreation Mitigation: Specify timber harvest timeframe during early spring or late fall. Close the cabin to public use during harvest activities. Use local publications and the reservation system to notify the public of harvest activities.

Scenery: Unit 108 highly visible from boat route along west side of Gravina south of Nehenta Bay. Maintain most of forested texture by individual tree selection or small group selection (2-acre openings). Western corner of unit visible from Phocena Bay. Create a few small scattered openings in this portion that blend with surrounding visible natural openings. Approximately 50% retention. Adopted VQO is partial retention.

SILVICULTURE:

Vegetation: Unit is well stocked, dominated by western hemlock with some scattered Sitka spruce. The south/southeast edge of unit has a high number of stems/acre with smaller diameter timber. No insect/disease problems were found within unit. Windthrow potential is light to moderate.

Desired Future Condition: Future stand will be a mosaic of small openings with different cohorts resulting in an uneven-aged stand. Natural regeneration through release of established stems is expected to be abundant. Possible future treatment may include a release cutting.

Treatment: Apply a group selection prescription, removing approximately 50% of original basal area during initial entry.

Harvest in small groups and/or strips. Openings will not exceed 2 acres and/or strips will be no wider than two times the average tree height.

SOILS:

Slopes Greater than 72%: The results of an on-site soil stability investigation determined that a windfirm buffer along eastern boundary v-notch is required to maintain slope stability (BMPs 13.2, 13.5). Approximately 1 acre of slopes greater than 72% will be harvested.

TIMBER:

This unit is designed for helicopter yarding.

WILDLIFE:

Marten Standards and Guidelines apply – leave 10-20% of original stand structure in areas of high value marten habitat, averaging 4 large trees/acre (20-30" dbh), 3 snags/acre, and 3 large, downed trees/acre (20-30" dbh). Interagency bald eagle MOU applies. There is a seasonal restriction on repeated helicopter flights within 1/4 mile of active nests.

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Appendix 3

Road Cards

Appendix 3

Road Cards

General Mitigation Measures

The general measures described in Introduction to Appendix 2, Unit Cards, apply to all units and roads in the Gravina Island project. The source(s) of each general measure are listed after the measure in terms of individual Forest-wide Standards and Guidelines (see Chapter 4 of the Forest Plan) or BMPs (see Appendix C of the Forest Plan and Chapter 10 of FSH 2509.22, The Soil and Water Conservation Handbook). Measures with application to a particular road are listed on the individual road cards as Site-specific Design Criteria.

General Design Criteria and Elements are shown on the Road Management Objectives portion of the road cards and are defined as follows:

- Functional Class: Local (L), Collector (C), and Arterial (A) classifications
- Service Life: Long (L) or Short (S), Constant (C) or Intermittent (I), consistent with NEPA disclosure document
- Traffic Service Level: Traffic Service Level anticipated for the design (A, B, C, D) that takes into consideration the characteristics of the road and operating conditions

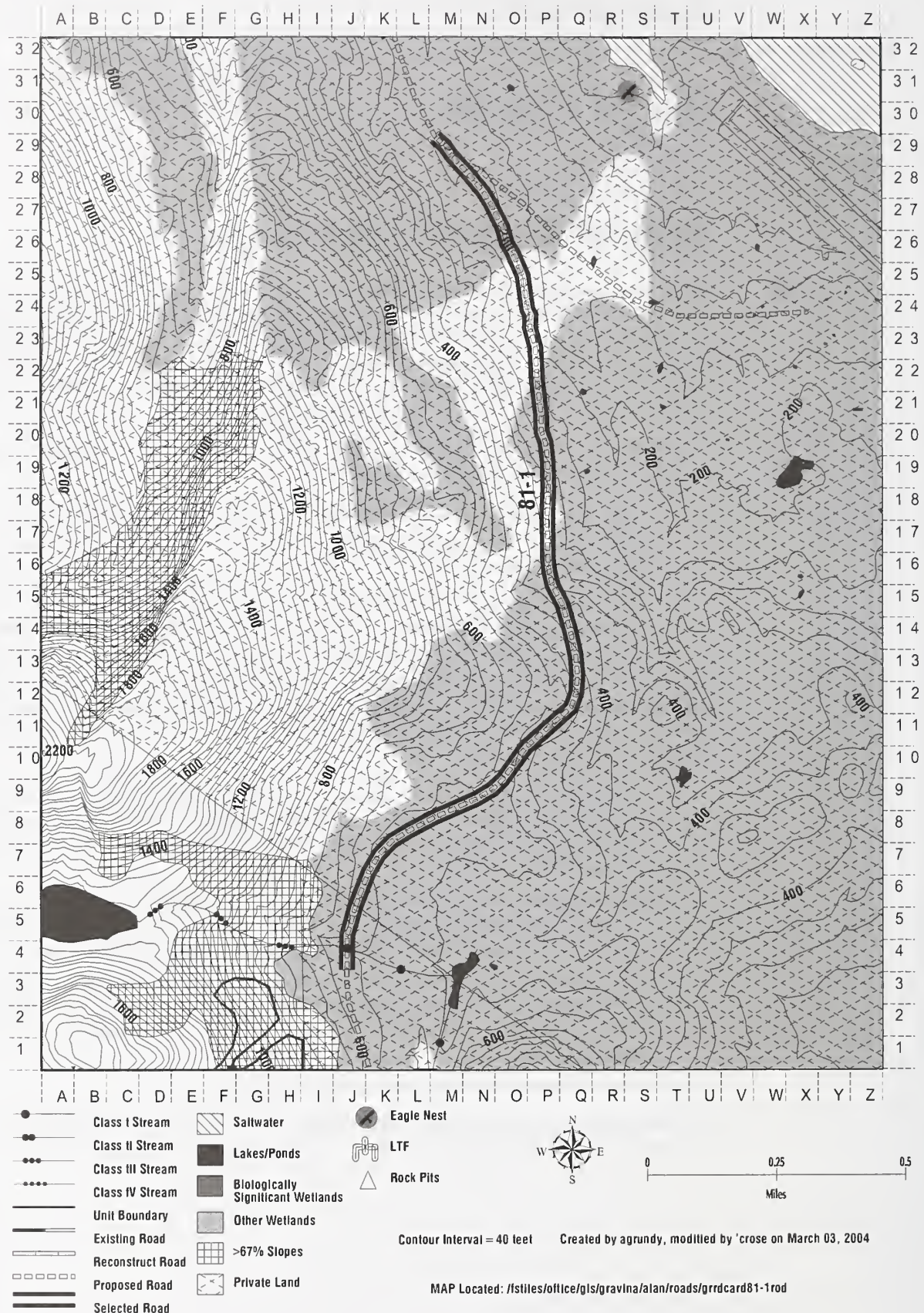
Operational Maintenance Levels indicate the level of road maintenance, either Maintenance Level 2 or 3, during sale-related activities. Objective Maintenance Levels indicate the long-term maintenance plan for the roads (after completion of silvicultural activities) and incorporate Traffic Service Levels, as described in the following definitions. Applicable maintenance levels for the project area are:

- Maintenance Level 1 (Traffic Service Level D): Roads are closed by barrier, bridge removal or organic encroachment and are monitored for resource protection. Basic custodial maintenance is performed to perpetuate the road and to facilitate future management activities.
- Maintenance Level 2 (Traffic Service Level C): Roads are maintained for high-clearance vehicles and monitored for resource protection. Traffic would be minor, consisting of logging trucks during sale operations, and administrative uses.
- Maintenance Level 3 (Traffic Service Level B): Roads are maintained for travel by a prudent driver in a standard passenger vehicle and are subject to the provisions of the Highway Safety Act. Road use is by administrative and passenger vehicles, and by logging trucks.

AFRPR Status: Alaska Forest Resource Protection Regulations.

The road segments are described using kilometer posts as beginning and ending points. Lengths are given in kilometers (km). Road width is given in meters (m).

Gravina Record of Decision Road Card 81-1



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation State land (non-NFS)
Route No. 8100000-1	Route Name Central Gravina	Status New Construction
Begin K.P. 0.00	Length (kilometers) 3.03	Begin Termini 0.00
		End Termini 3.03

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	B	Rock	4.3 m	Log truck	Lowboy	10 mph

Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road is to be left open to the public upon completion of construction and during silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 3

Objective Maintenance Level: 3

Maintenance Narrative: An access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

Operation Criteria

Highway Safety Act: Yes

Jurisdiction: State ownership

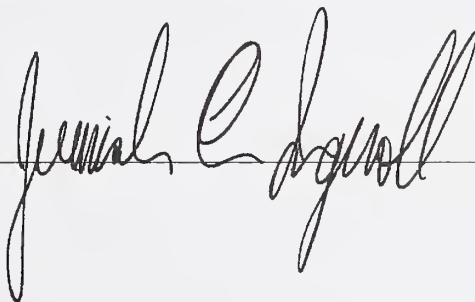
AFRPR Status: Active

Travel Management Strategies:

Encourage:	recreation traffic, hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	N/A
Eliminate	N/A

Travel Management Narrative: This road segment is entirely on State land; access will be managed by Ketchikan Gateway Borough. An access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100000-1

Road Location: Road access all units in the project area. LTF is on private land and run by a private operator with all the proper permits. Grades are favorable to 10-12%; construction difficulty is easy to moderate. Location is controlled by stream crossings along route, high-value wetlands avoidance, location constraints of private landowners and local topography. Road does not cross any areas of 67% or greater sideslopes.

Wetlands: Road location is entirely on wetlands but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands would mean longer, higher-cost roads that could have greater impacts on similar areas of wetlands.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8).

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road and will no doubt be on private lands. A commercial source of rock will be used for portions of road not on NFS lands until road accesses a rock source on NFS lands. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: Even though road is on private lands, FS will recommend that all rock pits be located off the main road when possible, or at least designed so they blend in with corridor.

Heritage: No resource concerns were identified.

Road Management Objectives

Stream Crossings

Road No. 8100000-1

A.) Km 3.0 **AHMU:** Class I **Channel Type:** MC1 **BF Width:** 1.0m **BF Depth:** 0.3m **Substrate:** cobble/bedrock
Gradient: 6% **Structure:** 1500mm cmp **Passage Req'd:** No **Timing Dates:** No
Narrative: Stream crossing is at the break between Class I and Class IV stream channel classifications. Completed stream surveys verified the absence of fish and fish habitat upstream of the stream crossing. Fish passage is not required due to absence of fish habitat above the stream crossing.

Gravina Record of Decision Road Card 81-2



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM (NFS) and State (non-NFS)	
Route No. 8100000-2	Route Name Central Gravina	Status New Construction	
Begin K.P. 0.00	Length (kilometers) 3.50	Begin Termini (km) 3.03	End Termini (km) 6.53

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	B	Rock	4.3 m	Log truck	Lowboy	10 mph

Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road is to be left open to the public upon completion of construction and during silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 3

Objective Maintenance Level: 3

Maintenance Narrative: An access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

Operation Criteria

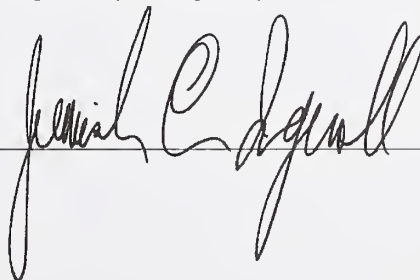
Highway Safety Act: Yes **Jurisdiction:** State and National Forest System ownership **AFRPR Status:** Active
Travel Management Strategies:

Encourage:	recreation traffic, hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	N/A
Eliminate	N/A

Travel Management Narrative: The majority of this road segment is on State land; access to the NFS boundary is managed by Ketchikan Gateway Borough. An access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

A closure order will be in force at the NFS boundary during deer hunting and wolf trapping seasons (generally from August 1 through March or April); the road will be open May through July.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100000-2

Road Location: Road access all units in the project area. LTF is on private land and run by a private operator with all the proper permits. Grades are favorable to 10%; construction difficulty is easy to moderate. Location is controlled by stream crossing along route, high-value wetlands avoidance, location constraints of private landowners and local topography. Road crosses onto NFS lands at approximately k.p.5.50

Wetlands: Road location is entirely on wetlands (k.p. 0.00 to k.p. 2.10) but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands could mean longer, higher-cost roads that would have greater impacts on similar areas of wetlands.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8).

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road and will no doubt be on private lands. A commercial source of rock will be used for portions of road not on NFS lands until road accesses a rock source on NFS lands. Timing will be required on all blasting within one half mile of known eagle nests

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: Even though road is on private lands, FS will recommend that all rock pits be located away from main road, or at least designed so that they blend in with the corridor. All ROW slash should be removed from side of road, particularly where road runs along Bostwick Lake in order to allow easier access to lake.

Heritage: No resource concerns were identified.

Road Management Objectives

Stream Crossings

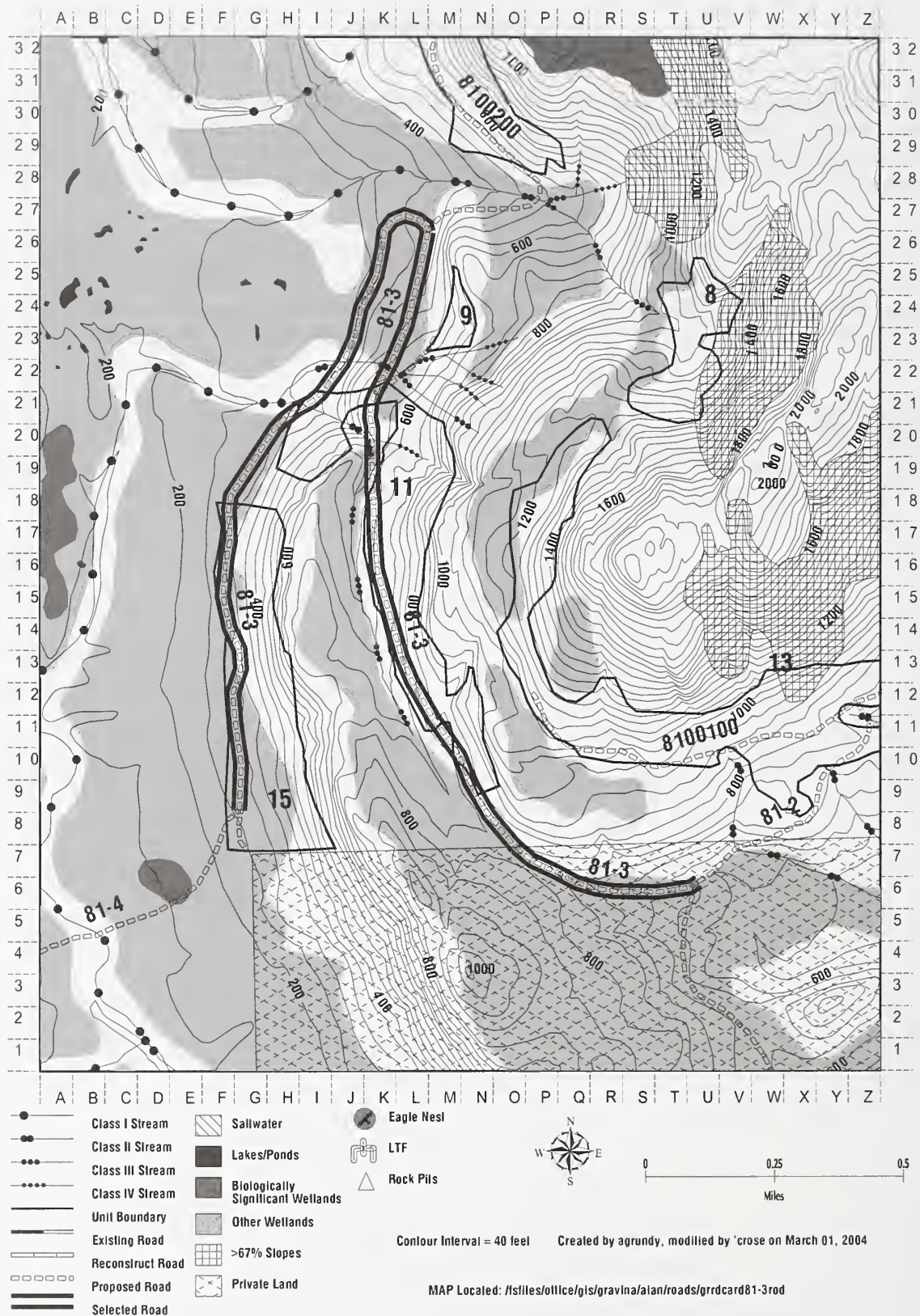
Road No. 8100000-2

**A.) KM 2.90 AHMU: Class II Channel Type: HC1 BF Width: 1.5m BF Depth: 0.3m Substrate: cobble/bedrock
Gradient: 5% Structure: Bridge/Arch Pipe Passage Req'd.: Yes Timing Dates: No
Narrative:** Stream surveys verified the presence of resident salmonids downstream and upstream of the stream crossing.
Due to the steep gradient present on this stream, a bridge or arch pipe will be required for fish passage.

**B.) KM 3.10 AHMU: Class II Channel Type: HC1 BF Width: 1.0m BF Depth: 0.3m Substrate: cobble
Gradient: 2-3% Structure: Arch Pipe/Bridge Passage Req'd.: Yes Timing Dates: No
Narrative:** Stream surveys verified the presence of resident salmonids downstream and upstream of the stream crossing.
Due to the steep gradient present on this stream, a bridge or arch pipe will be required for fish passage.

**C.) KM 3.35 AHMU: Class II Channel Type: MM1 BF Width: 2.0m BF Depth: 0.5m Substrate: cobble/gravel
Gradient: 10% Structure: Arch Pipe/Bridge Passage Req'd.: Yes Timing Dates: No
Narrative:** Stream surveys verified the presence of resident salmonids downstream and upstream of the stream crossing.
Due to the steep gradient present on this stream, a bridge or arch pipe will be required for fish passage.

Gravina Record of Decision Road Card 81-3



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM (NFS) and State (non-NFS)
Route No. 8100000-3	Route Name Central Gravina	Status New Construction
Begin K.P. 0.00	Length (kilometers) 4.83	Begin Termini (km) 6.53
		End Termini (km) 11.36

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	B	Rock	4.3 m	Log truck	Lowboy	10 mph

Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road is to be seasonally open to the public upon completion of construction and during silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 3

Objective Maintenance Level: 3

Maintenance Narrative: Road is to be seasonally open upon completion of silvicultural activities. An access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

Operation Criteria

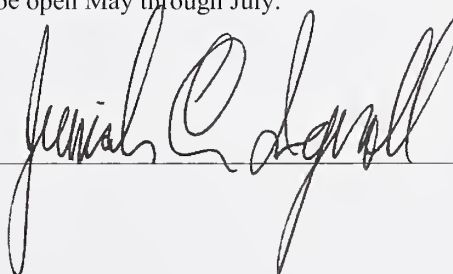
Highway Safety Act: Yes **Jurisdiction:** State and National Forest System ownership **AFRPR Status:** Active
Travel Management Strategies:

Encourage:	recreation traffic, hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	N/A
Eliminate	N/A

Travel Management Narrative: A portion of this road segment is on State land; an access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

A closure order will be in force at the NFS boundary during deer hunting and wolf trapping seasons (generally from August 1 through March or April); the road will be open May through July.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100000-3

Road Location: Road access all units in the project area. LTF is on private land and run by a private operator with all the proper permits. Grades are favorable to 10%; construction difficulty is easy to moderate. Final location will address wildlife concerns around possible wolf den; TLMP S&Gs are to be followed. Location is controlled by stream crossing along route, high-value wetlands avoidance, location constraints of private landowners and local topography.

Wetlands: Road location is on wetlands (k.p. 1.75 to 2.87 and k.p. 3.50 to 4.83) but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands could mean longer, higher-cost roads that would have greater impacts on similar areas of wetlands.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8).

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road and will no doubt be on private lands. A commercial source of rock will be used for portions of road not on NFS lands until road accesses a rock source on NFS lands. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: Locate all rockpits away from main arterial corridor if possible or look for ways to blend them into the corridor.

Heritage: No resource concerns were identified.

Road Management Objectives

Stream Crossings

Road No. 8100000-3

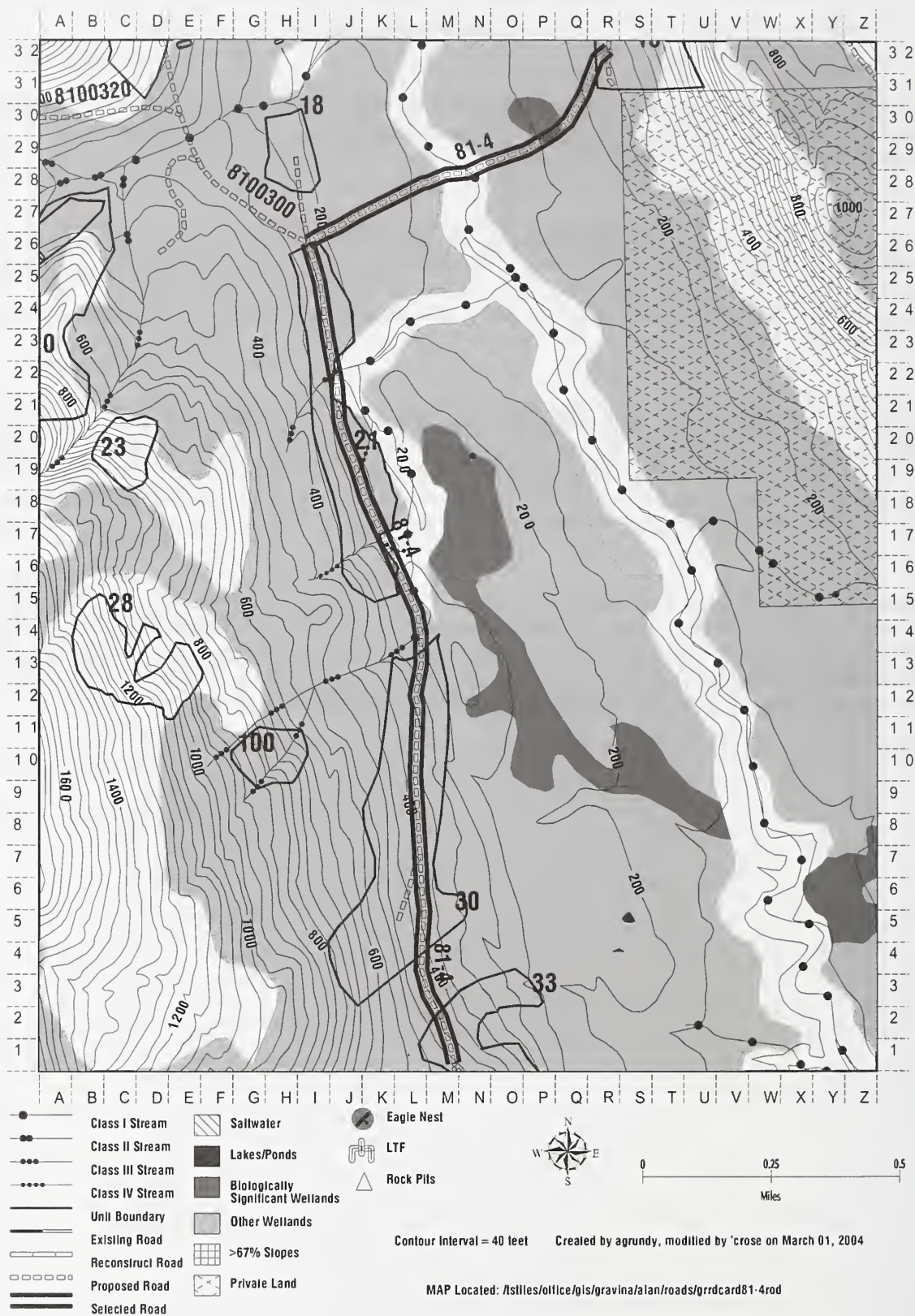
**A.) Km 1.93 AHMU: Class IV Channel Type: HC5 BF Width: 0.5m BF Depth: 0.2m Substrate: cobble/solid
Gradient: 15% Structure: 1200mm cmp Passage Req'd.: No Timing Dates: No
Narrative:**

**B.) Km 2.09 AHMU: Class III Channel Type: HC1 BF Width: 0.5m BF Depth: 0.2m Substrate: cobble/bedrock
Gradient: 8-10 % Structure: 1200mm cmp Passage Req'd.: No Timing Dates: July 18-August 3
Narrative:** Due to the close proximity of anadromous Class I fish habitat downstream, all instream road construction activities must be completed between July 18-August 3. Passage is not required due to the absence of fish upstream of the stream crossing.

**C.) Km 3.06 AHMU: Class II Channel Type: MM1 BF Width: 3.5m BF Depth: 0.5m Substrate: cobble/gravel
Gradient: 6 % Structure: Bridge/Arch Pipe Passage Req'd.: Yes Timing Dates: July 18-August 3
Narrative:** Fish passage is required at this stream crossing due to the presence of resident fish both downstream and upstream of the crossing. Also, due to the close proximity of anadromous Class I fish habitat downstream, all instream road construction activities must be completed between July 18-August 3.

**D.) Km 3.22 AHMU: Class I Channel Type: FP3/MM1 BF Width: 4m BF Depth: 0.3m Substrate: cobble/gravel
Gradient: 6-8% Structure: Bridge/Arch Pipe Passage Req'd.: Yes Timing Dates: July 18-August 3
Narrative:** Fish passage is required at this stream crossing due to the presence of anadromous/resident fish both downstream and upstream of the crossing. Also, due to the close proximity of anadromous Class I fish habitat downstream, all instream road construction activities must be completed between July 18-August 3.

Gravina Record of Decision Road Card 81-4



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM
Route No. 8100000-4	Route Name Central Gravina	Status New Construction
Begin K.P. 0.00	Length (kilometers) 3.81	Begin Termini (km) 11.36
		End Termini (km) 15.17

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	B	Rock	4.3 m	Log truck	Lowboy	10 mph

Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road is to be seasonally open to the public upon completion of construction and during silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 3

Objective Maintenance Level: 3

Maintenance Narrative: Road is to be seasonally open upon completion of silvicultural activities.

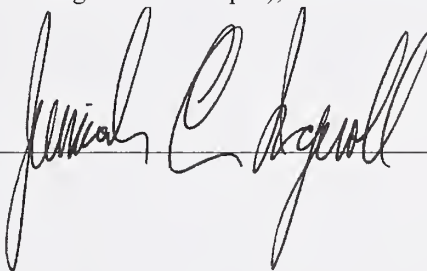
Operation Criteria

Highway Safety Act: Yes **Jurisdiction:** National Forest System ownership **AFRPR Status:** Active
Travel Management Strategies:

Encourage:	recreation traffic, hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	N/A
Eliminate	N/A

Travel Management Narrative: A closure order will be in force at the NFS boundary during deer hunting and wolf trapping seasons (generally from August 1 through March or April); the road will be open May through July.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100000-4

Road Location: Road access all units in the project area. LTF is on private land and run by a private operator with all the proper permits. Grades are favorable to 10%; construction difficulty is easy to moderate. Final location will address wildlife concerns around possible wolf den; TLMP S&Gs are to be followed. Location is controlled by stream crossing along route, high-value wetlands avoidance, location constraints of private landowners, and local topography.

Wetlands: Road location is entirely on wetlands but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands would mean longer, higher-cost roads that could have greater impacts on similar areas of wetlands.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8).

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road and will no doubt be on private lands. A commercial source of rock will be used for portions of road not on NFS lands until road accesses a rock source on NFS lands. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: Road location will meet Wolf Den Standards and Guidelines if applicable.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: Locate all rockpits away from main arterial corridor if possible or look for ways to blend them into the corridor.

Heritage: No resource concerns were identified.

Road Management Objectives

Stream Crossings

Road No. 8100000-4

A.) Km 0.56 **AHMU:** Class I **Channel Type:** FP4 **BF Width:** 37m **BF Depth:** 0.83m **Substrate:** cobble
Gradient: 3 % **Structure:** Bridge **Passage Req'd:** Yes **Timing Dates:** July 18 to August 3

Narrative: This stream crossing crosses the mainstem of Bostwick Creek. Fish passage is required at this stream crossing due to the presence of resident fish both downstream and upstream of the crossing. Also, due to the presence of coho, pink and steelhead throughout this area, all instream road construction activities must be completed between July 18 and August 3.

B.) Km 1.6 **AHMU:** Class III **Channel Type:** HC5 **BF Width:** 0.5m **BF Depth:** 0.2m **Substrate:** cobble/solid
Gradient: 6% **Structure:** 1200mm cmp **Passage Req'd.:** no **Timing Dates:** No

Narrative:

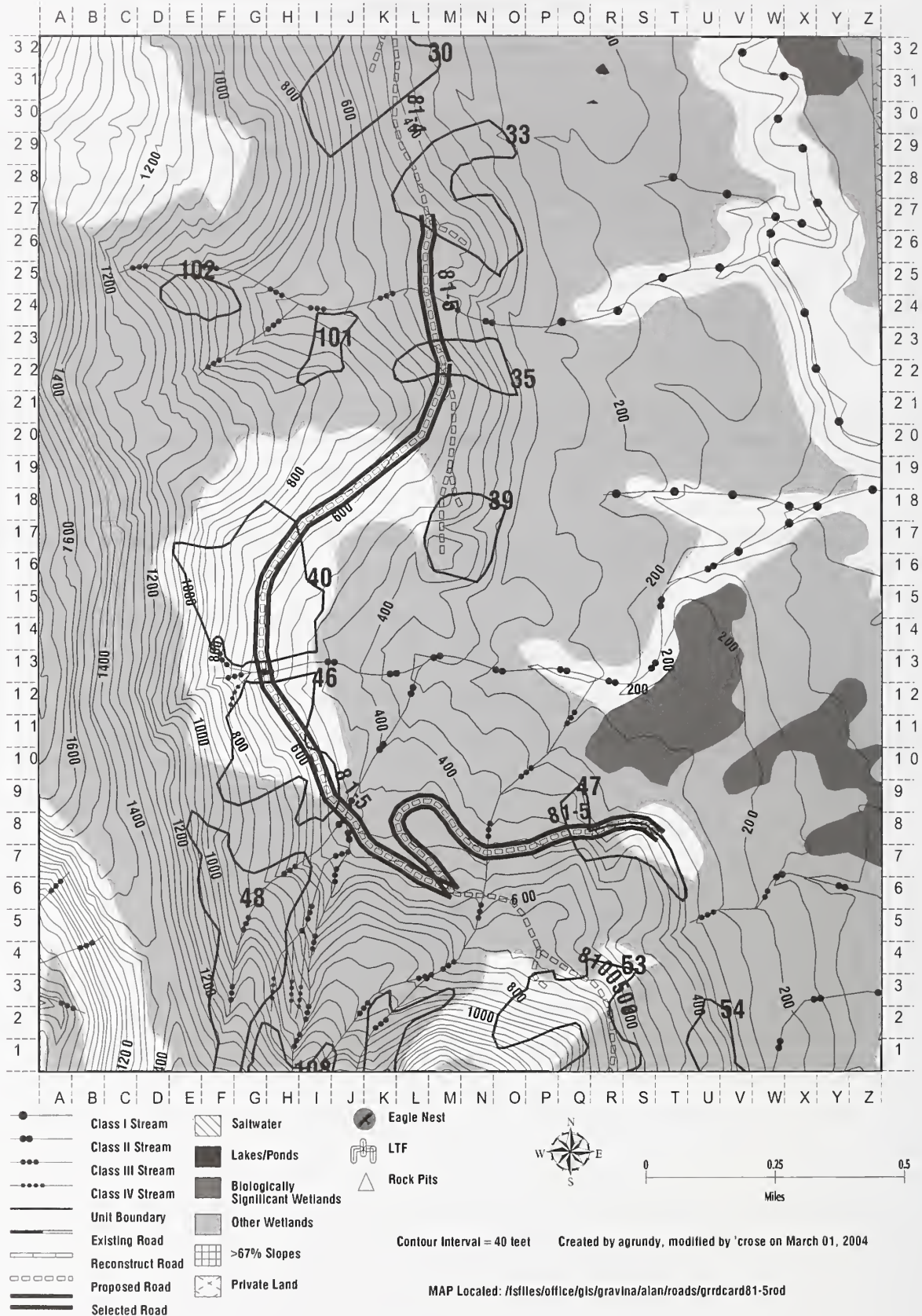
C.) Km 2.4 **AHMU:** Class IV **Channel Type:** HC5 **BF Width:** 0.5m **BF Depth:** 0.2m **Substrate:** cobble/solid
Gradient: 25% **Structure:** 900mm cmp **Passage Req'd.:** No **Timing Dates:** No

Narrative:

D.) Km 2.6 **AHMU:** Class III **Channel Type:** HC1 **BF Width:** 1.5m **BF Depth:** 0.2m **Substrate:** cobble/bedrock
Gradient: 20% **Structure:** 1500mm cmp **Passage Req'd.:** No **Timing Dates:** No

Narrative:

Gravina Record of Decision Road Card 81-5



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM
Route No. 8100000-5	Route Name Central Gravina	Status New Construction
Begin K.P. 0.00	Length (kilometers) 3.83	Begin Termini (km) 15.17
		End Termini (km) 19.00

General Design Criteria and Elements

Functional Class L	Service Life LI	Traffic Service Level B	Surface Rock	Width 4.3 m	Critical Vehicle Log truck	Design Vehicle Lowboy	Design Speed 10 mph
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Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road is to be seasonally open to the public upon completion of construction and during silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 3

Objective Maintenance Level: 3

Maintenance Narrative: Road is to be seasonally open upon completion of silvicultural activities.

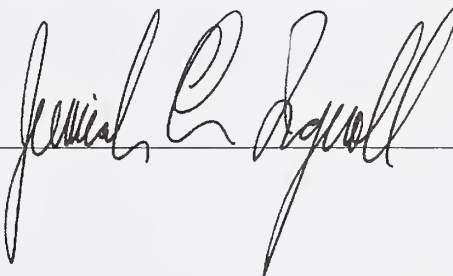
Operation Criteria

Highway Safety Act: Yes **Jurisdiction:** National Forest System ownership **AFRPR Status:** Active
Travel Management Strategies:

Encourage:	recreation traffic, hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	N/A
Eliminate	N/A

Travel Management Narrative: A closure order will be in force at the NFS boundary during deer hunting and wolf trapping seasons (generally from August 1 through March or April); the road will be open May through July.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100000-5

Road Location: Road access all units in the project area. LTF is on private land and run by a private operator with all the proper permits. Grades are favorable to 10%; construction difficulty is easy to moderate. Location is controlled by stream crossing along route, high-value wetlands avoidance, location constraints, logging system capabilities, and local topography.

Wetlands: Road location is on wetlands (k.p. 0.00 to 0.60 and k.p. 1.64 to 3.83) but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands could mean longer, higher-cost roads that would have greater impacts on similar areas of wetlands.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic and mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8).

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road and will no doubt be on private lands. A commercial source of rock will be used for portions of road not on NFS lands until road accesses a rock source on lands. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: Locate all rockpits away from main arterial corridor if possible or look for ways to blend them into the corridor.

Heritage: No resource concerns were identified.

Road Management Objectives

Stream Crossings

Road No. 8100000-5

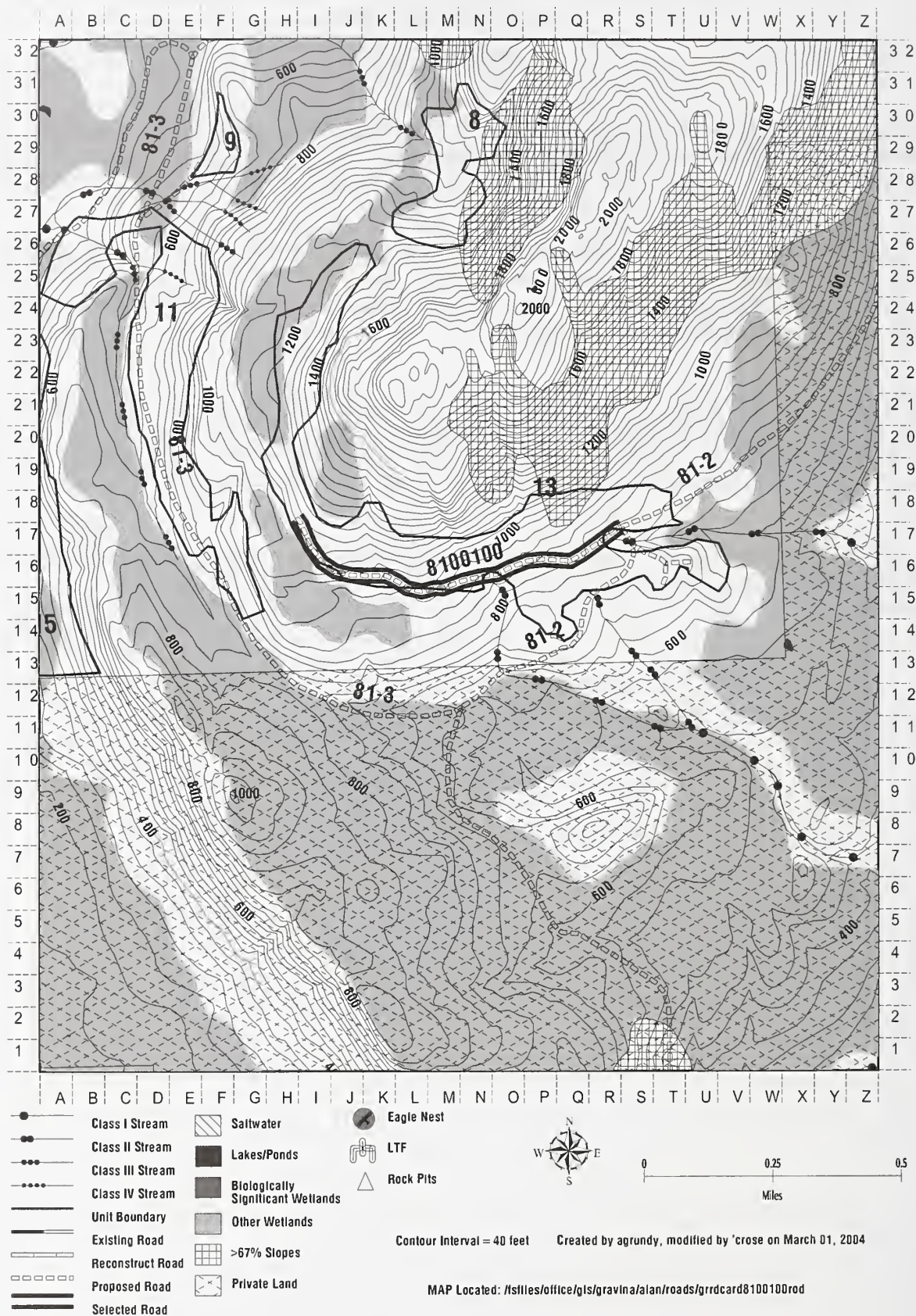
A.) Km 0.24 AHMU: Class III Channel Type: HC5 BF Width: 4.0m BF Depth: 0.1m Substrate: cobble/bdrk
Gradient: 10-15% Structure: 1500mm cmp Passage Req'd: No Timing Dates: No
Narrative:

B.) Km 1.46 AHMU: Class III Channel Type: HC1 BF Width: 2.5m BF Depth: 1.5m Substrate: cobble/solid
Gradient: 15% Structure: 1200mm cmp Passage Req'd: No Timing Dates: No
Narrative: This stream crossing is located 200 feet above where the stream changes from a Class II to Class III. Fish passage is not required at this crossing.

C.) Km 1.93 AHMU: Class II Channel Type: HC2 BF Width: 2.0m BF Depth: 0.25m Substrate: cobble/gravel
Gradient: 10% Structure: Bridge/Arch Pipe Passage Req'd: Yes Timing Dates: No
Narrative: Stream surveys verified the presence of resident salmonids downstream and upstream of the stream crossing. Due to the steep gradient present on this stream, a bridge or arch pipe will be required for fish passage.

D.) Km 2.91 AHMU: Class III Channel Type: HC5 BF Width: 3.6m BF Depth: 0.20m Substrate: cobble
Gradient: 20% Structure: 1800 mm cmp Passage Req'd: No Timing Dates: No
Narrative:

Gravina Record of Decision Road Card 8100100



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM
Route No. 8100100	Route Name Cameron Ridge	Status New Construction
Begin K.P. 0.00	Length (kilometers) 1.16	Begin Termini (km) 0.00
		End Termini (km) 1.16

General Design Criteria and Elements

Functional Class L	Service Life LI	Traffic Service Level D	Surface Rock	Width 4.3 m	Critical Vehicle Log truck	Design Vehicle Log truck	Design Speed 10 mph
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Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road closed after completion of silvicultural activities. Road to have all drainage structures removed.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road is to be closed upon completion of silvicultural activities, all drainage structures removed.

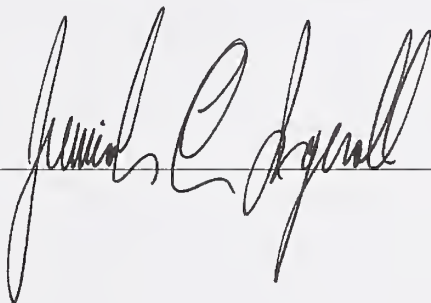
Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest System ownership **AFRPR Status:** Closed
Travel Management Strategies:

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: Road to remain as non-motorized recreation trail after closure.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-Specific Design Criteria

Road No. 8100100

Road Location: Road accesses Unit 13. Grades are favorable to 10%; construction difficulty is easy to moderate. Location is controlled by logging systems, high-value wetlands avoidance, location constraints of private landowners, and local topography.

Wetlands: Road location avoids all mapped wetlands.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.7, 14.8).

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road; a commercial source of rock could be used for portions of road. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: No resource concerns were identified.

Heritage: No resource concerns were identified.

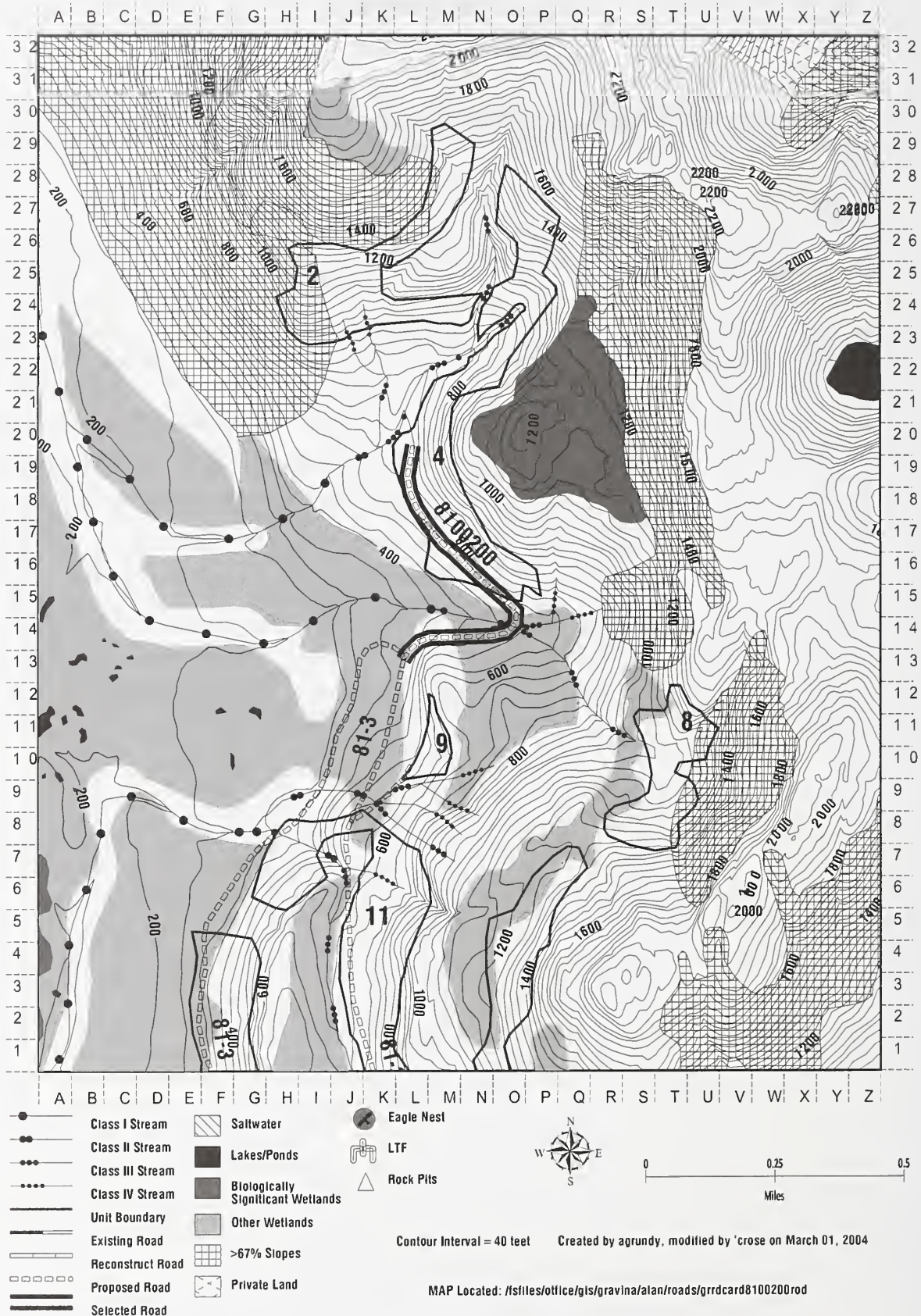
Road Management Objectives

Stream Crossings

Road No. 8100100

No stream crossings identified for this location.

Gravina Record of Decision Road Card 8100200



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM
Route No. 8100200	Route Name Vallenar Bay	Status New Const
Begin K.P. 0.00	Length (kilometers) 1.03	Begin Termini (km) 0.00
		End Termini (km) 1.03

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	D	Rock	4.3 m	Log truck	Lowboy	10 mph

Intended Purpose/Future Use: Road will be used for silvicultural activities. Road is to be closed after completion of silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road will be closed and put into storage status after completion of silvicultural activities.

Operation Criteria

Highway Safety Act: No
Travel Management Strategies:

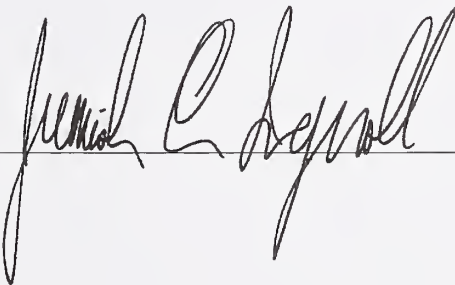
Jurisdiction: National Forest System ownership

AFRPR Status: Inactive

Encourage: N/A
Accept: N/A
Discourage: N/A
Prohibit: N/A
Eliminate: passenger vehicles

Travel Management Narrative: Road will be put into storage upon completion of silvicultural activities.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100200

Road Location: Road accesses Unit 4 (cable yarding) and Unit 2 (helicopter yarding) in the project area. LTF would be on private lands. Grades are favorable to 10%; construction difficulty is easy to moderate. Location is controlled by logging system constraints and stream crossings. Road does not cross any areas of 67% or greater sideslopes

Wetlands: Road location is on wetlands (k.p. 0.06 to k.p. 0.40) but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands could mean longer, higher-cost roads that would have greater impacts on similar areas of wetlands.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8).

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road and will no doubt be on private lands. A commercial source of rock will be used for portions of road not on NFS lands until road accesses a rock source on NFS lands. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: No resource concerns were identified.

Heritage: No resource concerns were identified.

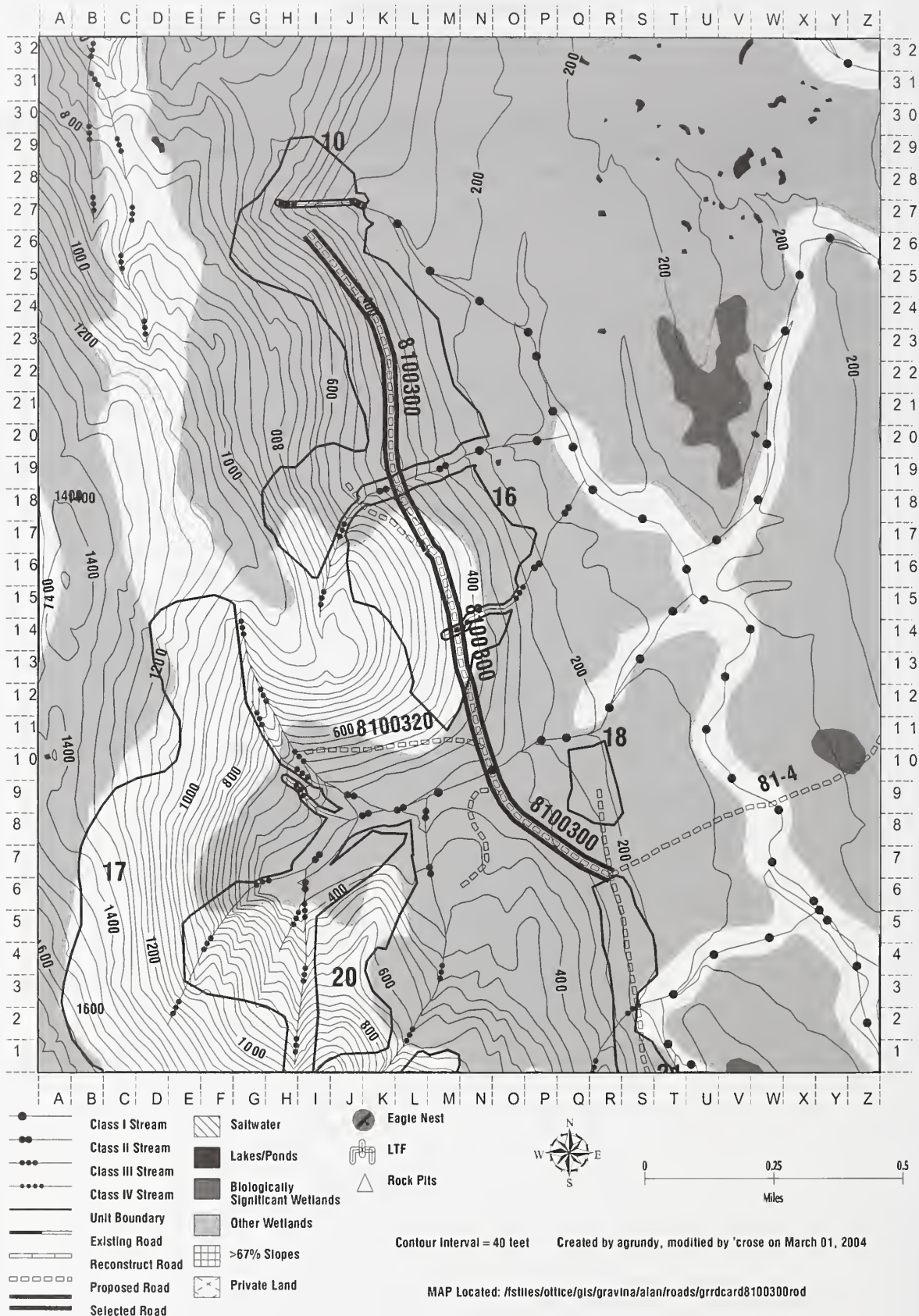
Road Management Objectives

Stream Crossings

Road No. 8100200

A.) Km 0.29 **AHMU:** Class II **Channel Type:** HC3 **BF Width:** 5m **BF Depth:** 0.3m **Substrate:** cobble/solid
Gradient: 8% **Structure:** Temp. Bridge **Passage Req'd:** Yes **Timing Dates:** No
Narrative: Due to presence of resident fish, a temporary bridge is recommended to provide fish passage.

Gravina Record of Decision Road Card 8100300



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM
Route No. 8100300	Route Name West Fk. Bostwick Cr.	Status New Construction
Begin K.P. 0.00	Length (kilometers) 2.32	Begin Termini (km) 0.00
		End Termini (km) 2.32

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	D	Rock	4.3 m	Log truck	Log truck	10 mph

Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road will be closed after completion of silvicultural activities. Road is to have all drainage structures removed.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road is to be closed upon completion of silvicultural activities, all drainage structures removed.

Operation Criteria

Highway Safety Act: No
Travel Management Strategies:

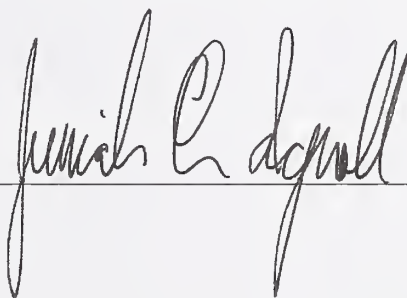
Jurisdiction: National Forest System ownership

AFRPR Status: Closed

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: Road is to remain as a non-motorized recreation trail after closure.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100300

Road Location: Road access Units 10 and 16. Grades are favorable to 10%; construction difficulty is easy to moderate. Location is controlled by logging systems, high-value wetlands avoidance, stream crossings and local topography.

Wetlands: Road location crosses mapped wetlands (k.p. 0.00 to 0.64 and k.p. 1.12 to 2.32). High-value wetlands (fens) are avoided wherever practicable. Crossing of wetlands was unavoidable due to safety, engineering design constraints and consideration for other resources.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8)

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road. A commercial source of rock could be used for portions of road. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: No resource concerns were identified.

Heritage: No resource concerns were identified.

Road Management Objectives

Stream Crossings

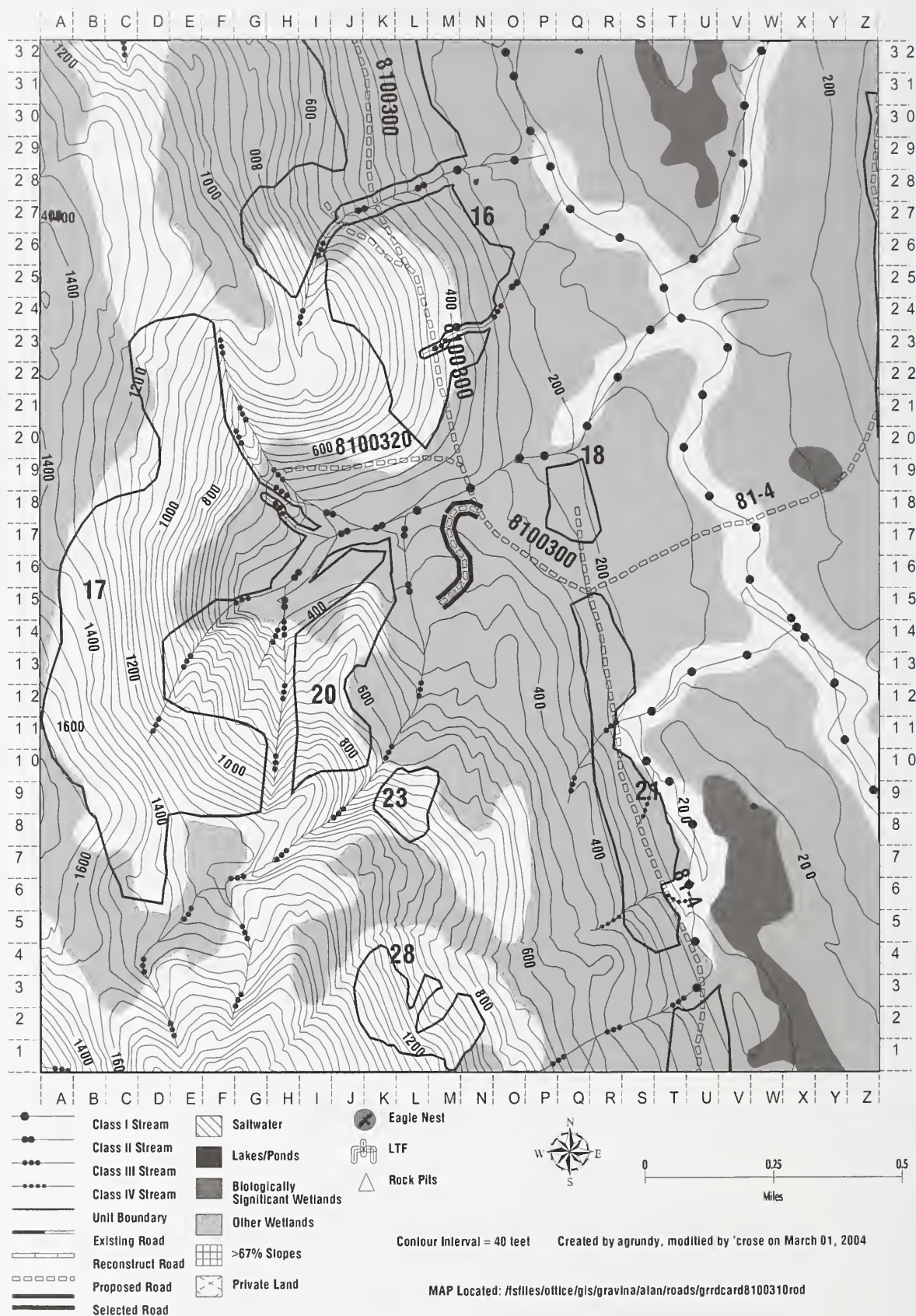
Road No. 8100300

**A.) Km 0.34 AHMU: Class I Channel Type: MC1 BF Width: 4m BF Depth: 0.4m Substrate: bedrock to cobble
Gradient: 2-4% Structure: Bridge Passage Req'd: Yes Timing Dates: July 18 to August 3**

**B.) Km 0.72 AHMU: Class III Channel Type: HC5 BF Width: 1-1.5m BF Depth: 0.5m Substrate: bedrock
Gradient: 23-25% Structure: 1200mm cmp Passage Req'd: No Timing Dates: None
Narrative: Stream surveys verified the presence of resident salmonids downstream and upstream of the stream crossing.
Due to the steep gradient present on this stream, a bridge or arch pipe is recommended for fish passage.**

**C.) Km 1.10 AHMU: Class II Channel Type: HC2/5 BF Width: 1m BF Depth: 0.3m Substrate: bedrock
Gradient: 6-8% Structure: Temp. Bridge Passage Req'd: Yes Timing Dates: None
Narrative: Stream surveys verified the presence of resident salmonids downstream and upstream of the stream crossing.
Due to the steep gradient present on this stream, a bridge or arch pipe is recommended for fish passage.**

Gravina Record of Decision Road Card 8100310



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM
Route No. 8100310	Route Name West Fk. Bostwick Cr. spur no.1	Status New Construction
Begin K.P. 0.00	Length (kilometers) 0.42	Begin Termini (km) 0.00
		End Termini (km) 0.42

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	D	Rock	4.3 m	Log truck	Log truck	10 mph

Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road will be closed after completion of silvicultural activities. Road is to have all drainage structures removed.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road is to be closed upon completion of silvicultural activities, all drainage structures removed.

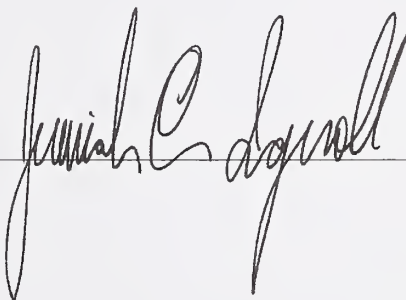
Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest System ownership **AFRPR Status:** Closed
Travel Management Strategies:

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: Road is to remain as a non-motorized recreation trail after closure.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100310

Road Location: Grades are favorable to 15%; construction difficulty is easy to moderate. Location is controlled by logging systems, high-value wetlands avoidance, and local topography.

Wetlands: Road location is entirely on wetlands. High-value wetlands (fens) are avoided wherever practicable. Crossing of wetlands was unavoidable due to safety, engineering design constraints and consideration for other resources.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8).

Rock Pits: As shown on map, there are no major concerns. Rock source will be required near beginning of the road. A commercial source of rock could be used for portions of road. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: No resource concerns were identified.

Heritage: No resource concerns were identified.

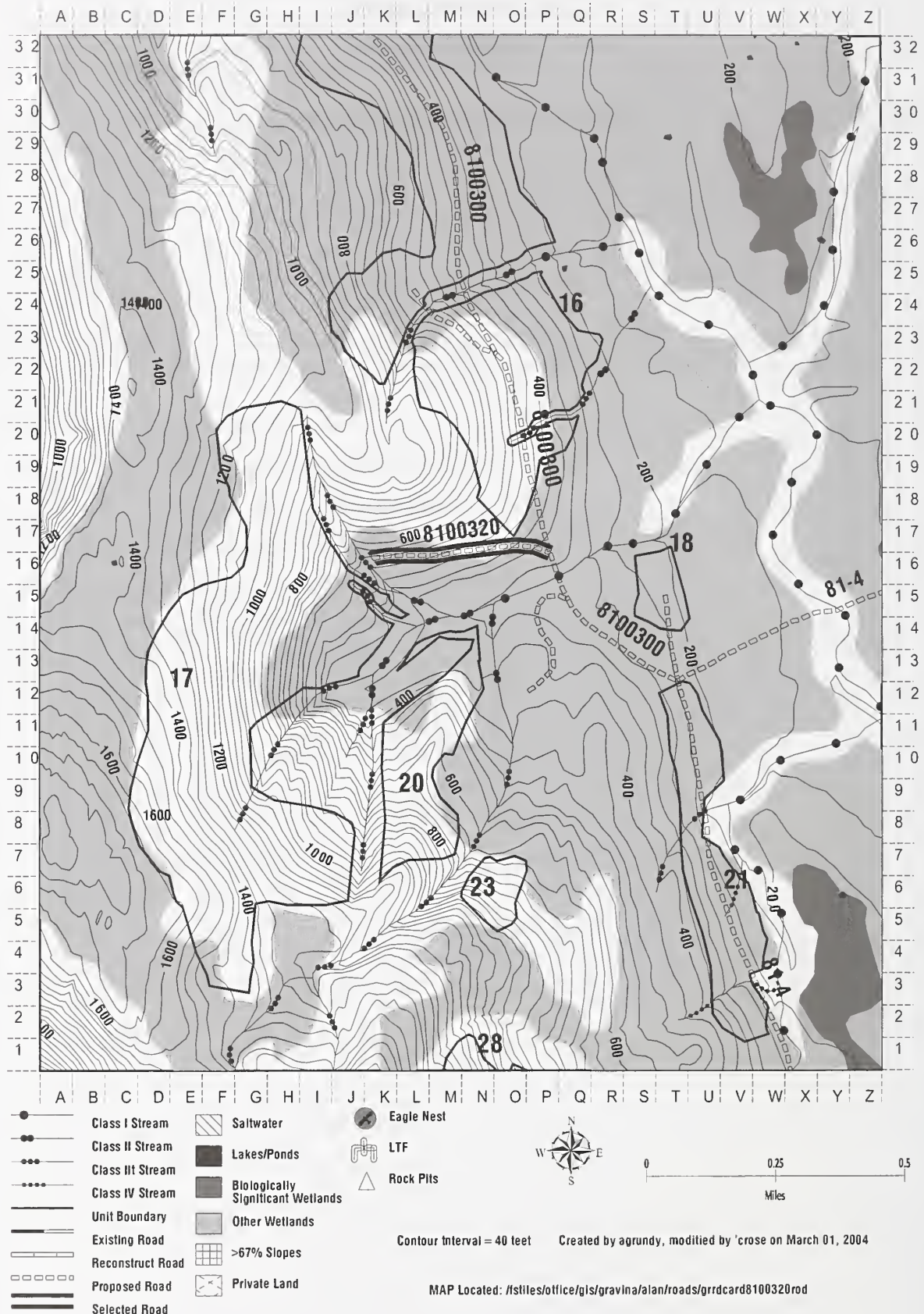
Road Management Objectives

Stream Crossings

Road No. 8100310

No stream crossings identified for this location.

Gravina Record of Decision Road Card 8100320



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM
Route No. 8100320	Route Name W. Fk. Bostwick Creek spur no.2	Status New Construction
Begin K.P. 0.00	Length (kilometers) 0.56	Begin Termini (km) 0.00
		End Termini (km) 0.56

General Design Criteria and Elements

Functional Class L	Service Life LI	Traffic Service Level D	Surface Rock	Width 4.3 m	Critical Vehicle Log truck	Design Vehicle Lowboy	Design Speed 10 mph
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Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road is to be closed upon completion of silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road is to be closed upon completion of silvicultural activities, all drainage structures removed.

Operation Criteria

Highway Safety Act: No
Travel Management Strategies:

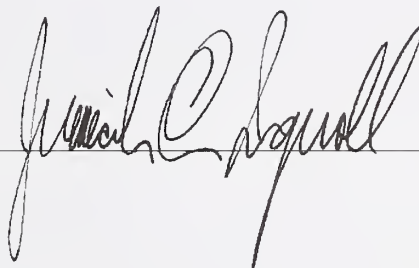
Jurisdiction: National Forest System ownership

AFRPR Status: Closed

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: Road is to remain as a non-motorized recreation trail after closure.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100320

Road Location: Location is controlled by logging systems, stream crossing along route, high-value wetlands avoidance location and local topography. Road ends at k.p. 0.56 to avoid three crossings near end in Unit 17.

Wetlands: Road location is entirely on wetlands but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands would mean longer, higher-cost roads that could have greater impacts on similar areas of wetlands.

Erosion Control: Erosion control plan to be submitted by construction contractor, will meet all applicable BMPs.

Rock Pits: As shown on map, there are no major concerns. Rock source may be required near beginning of the road. A commercial source of rock may be used for portions of road. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: No resource concerns were identified.

Heritage: No resource concerns were identified.

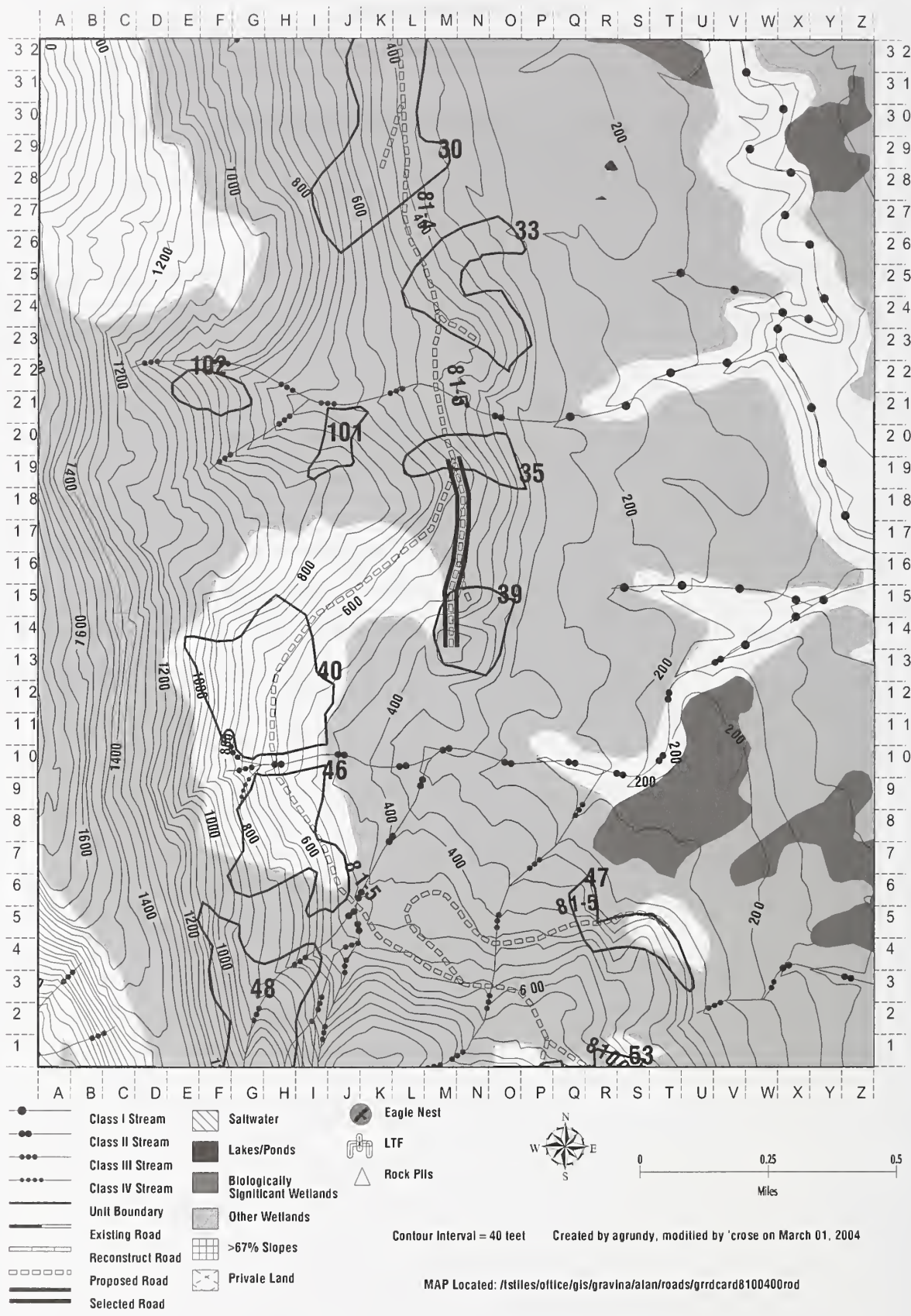
Road Management Objectives

Stream Crossings

Road No. 8100320

No stream crossings identified for this location.

Gravina Record of Decision Road Card 8100400



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM	
Route No. 8100400	Route Name Unit 39	Status New Construction	
Begin K.P. 0.00	Length (kilometers) 0.60	Begin Termini (km) 0.00	End Termini (km) 0.60

General Design Criteria and Elements

Functional Class L	Service Life LI	Traffic Service Level D	Surface Rock	Width 4.3 m	Critical Vehicle Log truck	Design Vehicle Log truck	Design Speed 10 mph
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Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road will be closed after completion of silvicultural activities. Road will have all drainage structures removed.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road is to be closed upon completion of silvicultural activities, all drainage structures removed.

Operation Criteria

Highway Safety Act: No
Travel Management Strategies:

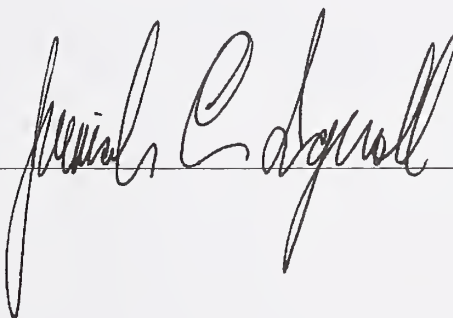
Jurisdiction: National Forest System ownership

AFRPR Status: Closed

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: Road is to remain as non-motorized recreation trail after closure.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100400

Road Location: Road access Unit 39. Grades are adverse to 15%; construction difficulty is easy to moderate. Location is controlled by logging systems, high-value wetlands avoidance, and local topography.

Wetlands: Road location is entirely on wetlands. High-value wetlands (fens) are avoided wherever practicable. Crossing of wetlands was unavoidable due to safety, engineering design constraints and consideration for other resources.

Erosion Control: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMPs 12.17, 14.8)

Rock Pits: As shown on map, there are no major concerns. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: No resource concerns were identified.

Heritage: No resource concerns were identified.

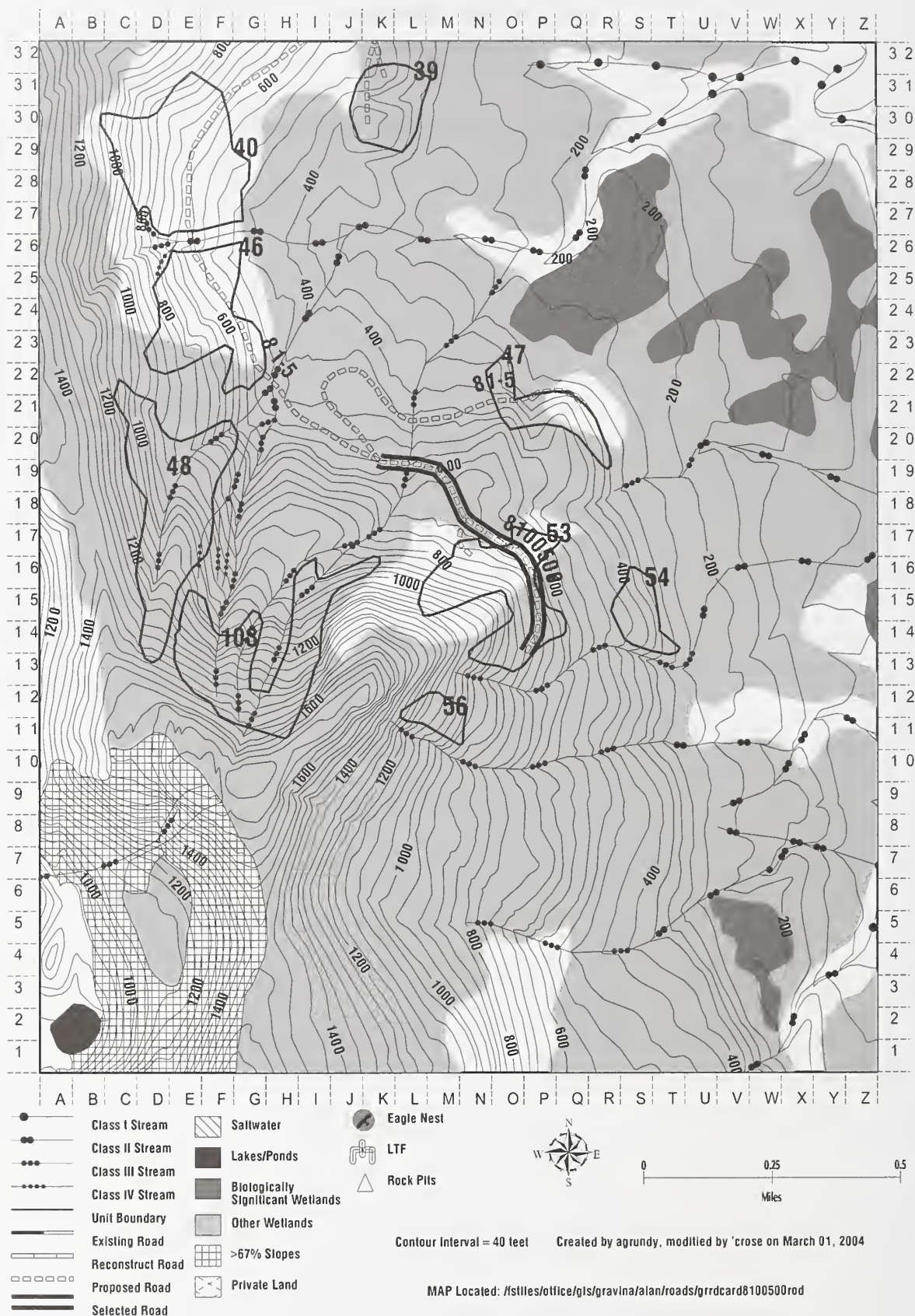
Road Management Objectives

Stream Crossings

Road No. 8100400

No stream crossings identified for this location.

Gravina Record of Decision Road Card 8100500



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM	
Route No. 8100500	Route Name Hi-spur	Status New Construction	
Begin K.P. 0.00	Length (kilometers) 0.90	Begin Termini (km) 0.00	End Termini (km) 0.90

General Design Criteria and Elements

Functional Class L	Service Life LI	Traffic Service Level D	Surface Rock	Width 4.3 m	Critical Vehicle Log truck	Design Vehicle Lowboy	Design Speed 10 mph
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Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road is to be closed upon completion of silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road is to be closed upon completion of silvicultural activities, all drainage structures removed.

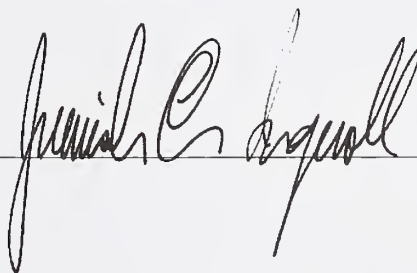
Operation Criteria

Highway Safety Act: No
Travel Management Strategies: **Jurisdiction:** National Forest System ownership **AFRPR Status:** Closed

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: Road is to remain as a non-motorized recreation trail after closure.

District Ranger Approval (signature) _____



Date: _____

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8100500

Road Location: Road accesses Unit 53 (cable yarding) and Units 54 and 56 (helicopter yarding). Location is controlled by logging systems, stream crossing along route, high-value wetlands avoidance location and local topography.

Wetlands: Road location is on wetlands, with the exception of 0.1 km in the middle of the location, but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands could mean longer, higher-cost roads that would have greater impacts on similar areas of wetlands.

Erosion Control: Erosion control plan is to be submitted by construction contractor, will meet all applicable BMPs.

Rock Pits: As shown on map, there are no major concerns. Rock source may be required near beginning of the road. A commercial source of rock may be used for portions of road. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: No resource concerns were identified.

Heritage: No resource concerns were identified.

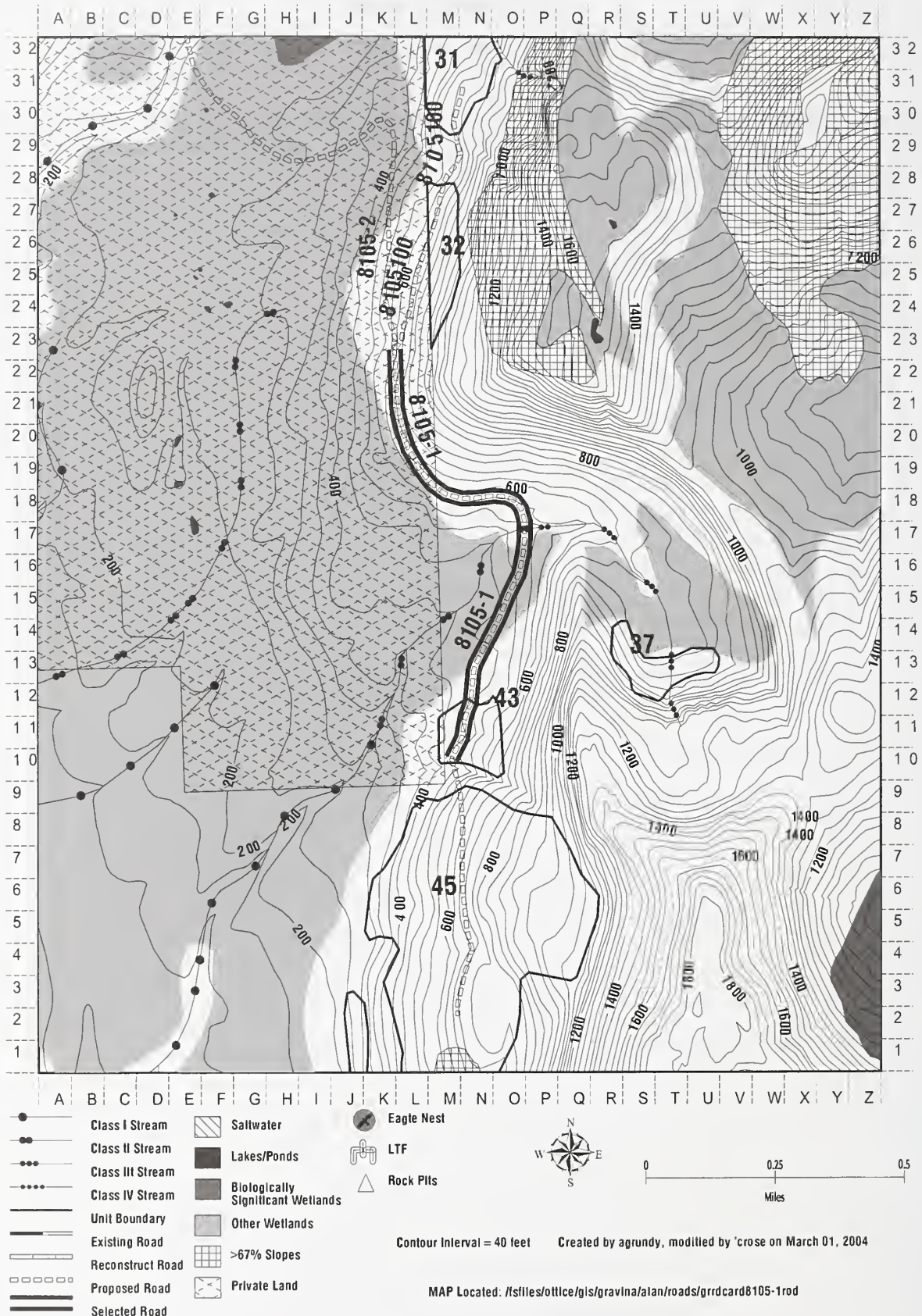
Road Management Objectives

Stream Crossings

Road No. 8100500

A.) Km 0.08 AHMU: Class III Channel Type: HC6 BF Width: 1.6m BF Depth: 0.23m Substrate: cobble/solid
Gradient: 7-22% Structure: 1500 mm cmp Passage Req'd: No Timing Dates: None
Narrative:

Gravina Island Timber Sale Record of Decision



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM (NFS) and State (non-NFS)
Route No. 8105000-1	Route Name East Gravina	Status New Construction
Begin K.P. 0.00	Length (kilometers) 2.38	Begin Termini (km) 0.00
		End Termini (km) 2.38

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	D	Rock	4.3 m	Log truck	Lowboy	10 mph

Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road on NFS lands is to be closed upon completion of silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road on NFS lands is to be closed upon completion of silvicultural activities, all drainage structures removed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** State and National Forest System ownership **AFRPR Status:** Closed
Travel Management Strategies:

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: A portion of this road is on State land; an access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

Road on NFS lands is to remain as a non-motorized recreation trail after closure.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8105000-1

Road Location: Road accesses Units 43 and 45 (cable yarding) and Unit 37 (helicopter yarding). Location follows base of steep ground to access units. Road grades are rolling at 10% maximum. Construction difficulty is easy to moderate. Location is controlled by logging systems, and local topography.

Wetlands: Road avoids mapped wetlands entirely.

Erosion Control: Erosion control plan is to be submitted by construction contractor, will meet all applicable BMPs.

Rock Pits: As shown on map, there are no major concerns. Rock source may be required near beginning of the road. A commercial source of rock may be used for portions of road. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: Locate all rockpits away from main arterial corridor if possible or look for ways to blend them into the corridor.

Heritage: No resource concerns were identified.

Road Management Objectives

Stream Crossings

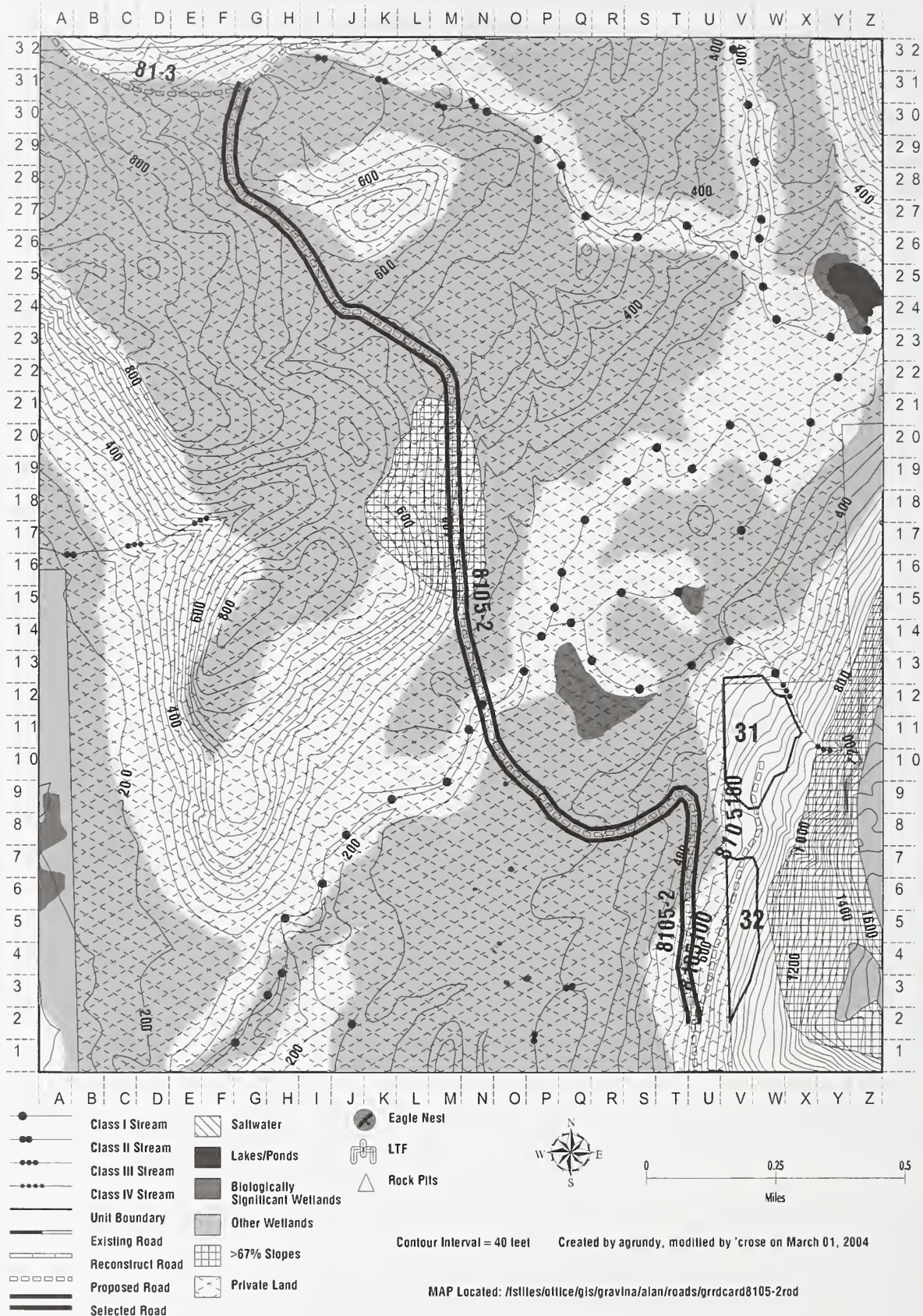
Road No. 8105000-1

A.) Km: 2.29 AHMU: Class II Channel Type: HC1 BF Width: 2.5m BF Depth: 0.2m Substrate: cobble

Gradient: 3-6% Structure: 1500mm cmp Passage Req'd: yes Timing Dates: none

Narrative: Stream surveys verified the presence of resident salmonids downstream and upstream of the stream crossing. Due to the steep gradient present on this stream, a bridge or arch pipe is recommended for this crossing.

Gravina Record of Decision Road Card 8105-2



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation State land (non-NFS)
Route No. 8105000-2	Route Name East Gravina	Status New Construction
Begin K.P. 0.00	Length (kilometers) 3.88	Begin Termini (km) 2.38
		End Termini (km) 6.26

General Design Criteria and Elements

Functional Class L	Service Life LI	Traffic Service Level D	Surface Rock	Width 4.3 m	Critical Vehicle Log truck	Design Vehicle Lowboy	Design Speed 10 mph
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Intended Purpose/Future Use: Uses include silvicultural and recreation use.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: An access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

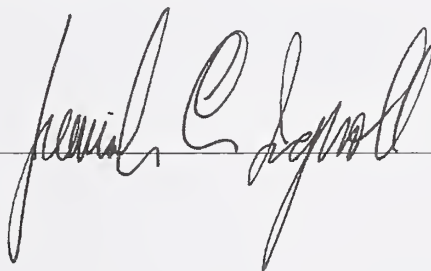
Operation Criteria

Highway Safety Act: No **Jurisdiction:** State of Alaska DNR land ownership **AFRPR Status:** Closed
Travel Management Strategies:

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: This road segment is entirely on State land; an access and maintenance agreement will be secured with Ketchikan Gateway Borough, with terms to be determined.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site-specific Design Criteria

Road No. 8105000-2

Road Location: Road ties to road 8105000-1, which accesses Units 43 and 45, and road 8105100, which accesses Units 31 and 32. Location follows base of steep ground to access units. Road grades are rolling at 10% maximum. Construction difficulty is easy to moderate. Location is controlled by logging systems, stream crossing with bridge and local topography. Road location is on State of AK DNR lands.

Wetlands: Road location is entirely on wetlands but was located to avoid high-value wetlands areas wherever practicable. Alternatives to the location on wetlands would mean longer, higher-cost roads that could have greater impacts on similar areas of wetlands. The wetlands for this area are not mapped due to it being non-National Forest System lands. Ground recon has determined that this is wetland area.

Erosion Control: Erosion control plan to be submitted by construction contractor, will meet all applicable BMPs.

Rock Pits: As shown on map, there are no major concerns. Rock source may be required near beginning of the road. A commercial source of rock may be used for portions of road. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No resource concerns were identified.

Soils/Water: No resource concerns were identified.

Silviculture: No resource concerns were identified.

Wildlife/Botany: No resource concerns were identified.

Lands/Minerals/Geology/Karst: No resource concerns were identified.

Scenery/Recreation: Locate all rockpits away from main arterial corridor if possible or look for ways to blend them into the corridor.

Heritage: No resource concerns were identified.

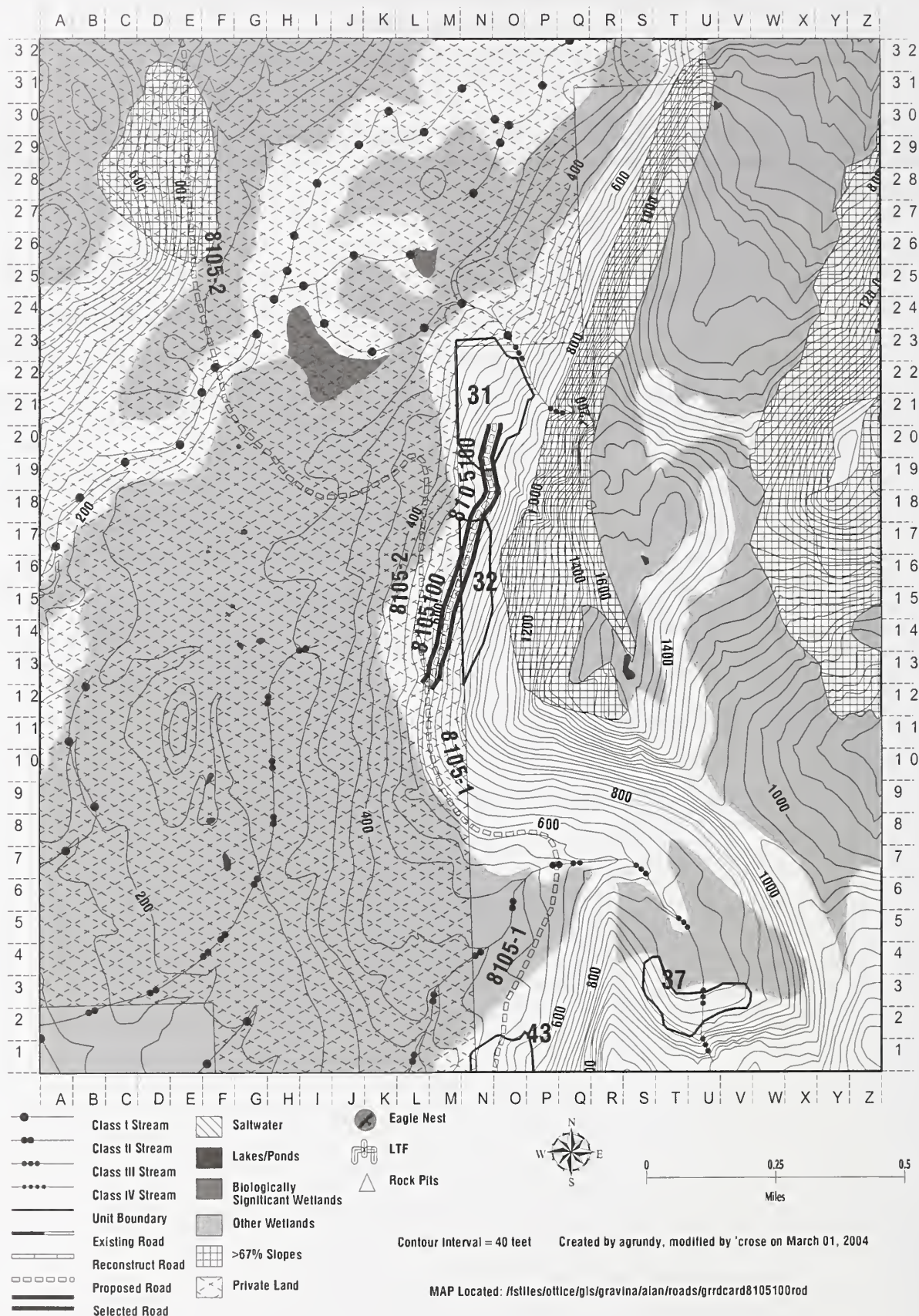
Road Management Objectives

Stream Crossings

Road No. 8105000-2

A.) Km 1.45 AHMU: Class I Channel Type: PA2 BF Width: 8m BF Depth: 0.4m Substrate: Cobbles/bedrock
Gradient: 5% Structure: Bridge Passage Req'd: Yes Timing Dates: July 18 to August 3
Narrative:

Gravina Record of Decision Road Card 8105100



Road Management Objectives

Project/EIS Gravina	System Gravina	Land Use Designation TM (NFS) and State (non-NFS)	
Route No. 8105100	Route Name E.Bostwick Upper Spur	Status New Construction	
Begin K.P. 0.00	Length (kilometers) 0.87	Begin Termini (km) 0.00	End Termini (km) 0.87

General Design Criteria and Elements

Functional Class	Service Life	Traffic Service Level	Surface	Width	Critical Vehicle	Design Vehicle	Design Speed
L	LI	D	Rock	4.3m.	Log truck	Lowboy	10 mph

Intended Purpose/Future Use: Uses include silvicultural and recreation use. Road to be closed upon completion of silvicultural activities.

Maintenance Criteria

Operational Maintenance Level: 2

Objective Maintenance Level: 1

Maintenance Narrative: Road to be closed upon completion of silvicultural activities, all drainage structures removed.

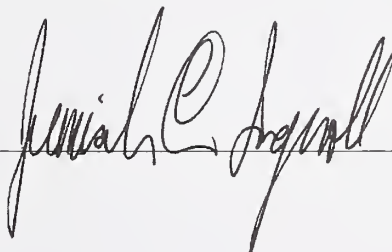
Operation Criteria

Highway Safety Act: No **Jurisdiction:** State and National Forest System ownership **AFRPR Status:** Closed
Travel Management Strategies:

Encourage:	hikers, bikers and berry pickers
Accept:	N/A
Discourage:	N/A
Prohibit:	motorized vehicles
Eliminate	N/A

Travel Management Narrative: Road is to remain as a non-motorized recreation trail after closure.

District Ranger Approval (signature)



Date:

3/9/04

Road Management Objectives

Site Specific Design Criteria

Road No. 8105100

Road Location: Road accesses Units 31 and 32. Road grades favorable to 15%, construction difficulty moderate. Location is controlled by logging systems, adjacent private lands, high-value wetlands avoidance and local topography.

Wetlands: Road location avoided mapped wetlands entirely.

Erosion Control: Erosion control plan to be submitted by construction contractor, will meet all applicable BMPs.

Rock Pits: As shown on map, no major concerns. Rock source may be required near beginning of the road. A commercial source of rock may be used for portions of road. Timing will be required on all blasting within one half mile of known eagle nests.

Resource Information (If applicable):

Timber/Logging: No concerns identified

Soils/Water: No concerns identified

Silviculture: No concerns identified

Wildlife/Botany: No concerns identified

Lands/Minerals/Geology/Karst: No concerns identified

Visual/Recreation: No concerns identified

Heritage: No concerns identified

Road Management Objectives

Stream Crossings

Road No. 8105100

No stream crossings identified for this location.

Appendix 3

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